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RHEUMATISM—A THEORY AS TO ITS CAUSATION

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The problems presented by rheumatism and rheumatic affections are of special interest to the osteopathic physician because of the great number of such cases, either real or supposed, which, in the hope of getting relief, find their way to his offices.

In a series of 559 consecutive cases presenting themselves to me for examination, 192, or 34 per cent., had rheumatism, rheumatic affections, or disorders which they thought were rheumatic, or in which a previous diagnosis of rheumatism had been made. Of these, thirty-five, or six per cent., were cases of true rheumatism either acute or chronic. Among the others were cases of neuritis, gout, arthritis deformans, gonorrheal arthritis, acromial bursitis, psoas abscess, infantile paralysis, synovitis, neglected fractures, old dislocations, tubercular hips, innominate subluxations, ribs or vertebral subluxations, etc. The question then of diagnosis is of utmost importance. Laboratory findings are not distinctive, and clinical evidence must be relied upon in making the diagnosis; but it is not my purpose to discuss that phase of the question.

A search of medical and osteopathic literature shows that the etiology of rheumatism has never been satisfactorily explained. A number of investigators have obtained evidence that it is an infectious disease, but the identity of the invading organism has not been definitely determined, different organisms being held responsible by different investigators. That certain micro-organisms are present in the acute manifestations of the disease seems to be established, but the evidence is not conclusive that they are of prime etiological importance.[1]

Reasoning osteopathically, the question arises, what normal function of the body has been perverted to account for the pathological findings. A study of the morbid anatomy shows that the fibrous connective tissues are the seat of activity of the disease,[2] especially those in relationship with the heart and articulations of the extremities. The blood contains an excess of fibrin;[3] the peri-articular structures are suffused with fibrino-serous material;[4] fibrinous proliferation occurs in the ligaments and tendon sheaths; the fluid of a rheumatic joint may be turbid and thickened by the presence of albumin and contain leucocytes and fibrin flakes.—*Osler.* After the acute stage, where fibrous tissues remain thickened, stiffening of the articuations results.

With regard to the valvular lesions:

> The connective tissue of the valves is first attacked by the inflammation, the endothelial covering being secondarily involved (more a physical than a true inflammatory process), the swollen connective tissue causing false motion of the valves.—*Mayhew.*[5] On the swollen ridges of the mitral cusps, may be found fibrinous vegetations, and though contractions of the cusps may follow, there is rarely any ulceration.—*Quimby.*[6]

It has seemed to me that one of the most important lines for investigation is as to whether this excessive fibrosis found in rheumatism is not the patho-

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logical basis for the disease. and that the etiology should include the factors resulting in the formation of fibrin in such places as a study of the morbid anatomy of rhematism may reveal.

In studying rheumatic conditions, I was impressed several years ago with the relationship between the formation of fibrous tissues so marked in rheumatism and the fact that one of the most marked changes in the blood in rheumatism was the excess of fibrin present, and in my mind the question arose as to the possibility of rheumatism being due to the formation of fibrin in the lymph spaces, since lymph is coagulable (Kirk), and since fibrin is known to form in the body under pathological conditions as in thrombosis, resulting in the formation of fibrinous tissue as seen in rheumatism. I have since endeavored to correlate some of the clinical findings in rheumatism with the foregoing assumption and note whether or not the facts would fit the theory.

All investigators agree that the metabolism of the body is disturbed in this disease, some holding the disturbance to be primary while some maintain it is secondary to infection. The consensus of medical opinion favors the latter theory. We osteopathic physicians are rather inclined to look upon the disturbed metabolism as primary and any infection as secondary.

If we examine the evidence presented by the known facts of rheumatism we may discover analogous conditions in shed blood to those shown in the formation of fibrin. All of the factors in either case are not yet known, still from the knowledge already at hand some striking comparisons may be made. A few facts from physiology need to be recalled. The fibers of connective tissue we learn "arise in the matrix, entirely apart from the cells themselves, by a process comparable to the formation of fibrin in clotting."[7] "An important constituent of normal lymph is fibrinogen[8] one of the antecedents of fibrin, and that "fibrin is soluble in solutions of urea."[9]

Now, if we refer to the factors known to influence the formation of fibrin in shed blood, as given by Kirk· we shall find some interesting comparisons between them and some of the possible factors in rheumatism:

Rest is favorable to the coagulation of blood. More fibrin is depositied when a join is at rest, accounting for the first notions of a rheumatic after rest being difficult and painful. Fibrin being soluble in urea and movement stimulating the production of urea, [10] so that after a rheumatic has moved about a little stiffness is lessened by the solvent action of urea; contact with foreign matter is a factor in the formation of fibrin. The foreign matter is probably in the nature of imperfectly digested food or imperfectly eliminated tissue wastes found in the lymph radicles. Fibrin will form about any object within the blood vessel, and undoubtedly the same is true of the lymph spaces; heat between 100 degrees F. and 120 degrees F. favors coagulation. In rheumatic fever the temperature is elevated above 100 degrees F., thus favoring fibrin formation; Injury to the walls of the blood vessel destroying the endothelial lining, causes fibrin to form; thus where there has been trauma, fibrin formation is apt to take place because of the injury to the tissues, consequently joints which have been injured are often the site of subsequent rheumatic involvement; The condition of less than twice the bulk of water to blood hastens coagulation. When sudden checking of perspiration by cold occurs, a certain amount of water, less than twice the volume of the lymph must be thrown back upon the lymph stream. I believe that this is at least one way in which cold becomes a factor in rheumatism, when other conditions favor fibrin formation.

On the other hand, certain influences are known to retard coagulation. Kirk mentions cold as one of them, with complete suspension of fibrin formation at

freezing temperature. I do not know of any experiments with a freezing mixture in clinical practice in rheumatism, nor do I presume that such procedure would be practical, but German physicians, Osler says, use cold compresses extensively on rheumatic joints. My own experience has been that cold is not only more agreeable to most patients, lessening the pain of acute rheumatism, but that less stiffening and permanent damage is done the joint where the cold measures are used than with hot compresses, although I know heat is generally recommended. I have now under observation a case in an unmarried woman of twenty-seven, who has had rheumatism for a period of a year, the knees being limited in motion at present to a very few degrees. During the acute stage and for a period of two months heat in various forms was kept constantly applied to the knees, and such dense deposits of fibrinous tissue formed as to render motion almost impossible. A shoulder which was involved in the acute stage and which was not subjected to continued heat made a perfect recovery.

The addition of water in more than twice the bulk of blood delays coagulation. In rheumatism we find marked anaemia, amounting to a diminution of red corpuscles by one or two million per cubic centimeter[11]—which may in some way be associated with the effort on the part of the organism as a whole to overcome the disease, by lessening the coagulability of the lymph and blood by diluting the same greatly with water; however, the conditions obtaining in the living organisms are not strictly comparable with that of shed blood, and this may be a far-fetched comparison. Other conditions may exist causing the anaemia: some have mentioned the toxaemia due to either the disturbed metabolism or to the micro-organisms as being a factor. There is a possibility that the fibrosis occurring as it does usually in connection with the connective tissue of the extremities has some unknown influence over the formation of the red corpuscles, which we learn, are supposed to be formed in the red marrow of the long bones.

Contact with the living tissues, especially the living blood vessels, retards coagulation. The lymph spaces being outside the protective covering of the endothelium of the blood vessels, there would not here be so great protection from coagulation. Although the lymph capillaries are provided with a distinct layer of endothelium, according to Kirk it may not have so great a restraining influence upon the formation of fibrin as that lining the blood vessels or it may be that the lymph stream being so much more sluggish in its movements might afford more favorable conditions for fibrin formation than exist in the blood stream.

The addition of neutral salts retards the formation of fibrin. This may explain in a measure some of the benefits derived from the mineral waters, containing such salts which are used for the treatment of rheumatism in various places, inasmuch as some of the salts of the water absorbed would have a restraining influence upon the formation of fibrin.

Fibrin formation is prevented by the removal of calcium salts; their presence is essential for coagulation. Their presence in the body in greater than normal amount or in abnormal places or combinations might predispose to fibrin formation. Clinical experience shows that lime water and foods containing lime tend to perpetuate rheumatic troubles.[12] I have had patients complain of rheumatism soon after a brief continued use of water containing lime in a considerable quantity. While a certain amount of lime in food is essential, there is evidence that in excess it becomes a factor in certain pathological conditions, among them rheumatism, for lime salts combined with neucleo-proteid forms thrombin which, with fibrinogen, forms fibrin.—*Pekelharing.*

The injection of pepsin or trypsin into the vessels of an animal before it is killed appears to prevent or stay coagulation, if

it be killed soon after. The secretion and absorption of the digestive ferments, I believe, become factors in rheumatism; first, because we so often find digestive disturbances of the upper alimentary tract in rheumatic conditions, and, second, because osteopathic lesions present in rheumatism are such as are known to influence the secretion or absorption of the gastric and pancreatic juices.[13] The use of certain food, which being imperfectly digested on account of the deficiency of the digestive ferments, pepsin or trypsin, might supply the proteid to the lymph in such form that it would unite with fibrinogen to form fibrin under favorable conditions.

That the liver is functioning abnormally in rheumatism there is little doubt. "The liver seems to be concerned in maintaing the coagulability of the blood in some unknown way. Blood that is kept circulating through the lungs and heart alone soon looses its coagulability. If the portal circulation be cut out of the systematic circulation, the blood also loses its property of coagulation, and agents which alter the coagulability of the blood fail to act under these circumstances,"[14] so that in a condition showing an excess of fibrin in the blood and lymph, as has been observed in rheumatism, abnormal functioning of the liver might be presupposed. The liver is also concerned in the production of urea, which is a factor in rheumatism through its solvent action upon fibrin. Normal tissue lymph contains 0.016 per cent. of urea.[15]

Viewing rheumatism as the formation of fibrin, under pathological conditions certain interpretations may be placed upon certain symptoms and manifestations of the disease.

The disease is in evidence first in the peri-articular connective tissue, rather than in the synovial membrane of the joint because the serous lymph is without thrombin and does not tend to coagulate spontaneously under normal conditions, while tissue lymph has the thrombin ferment present, which under certain conditions may unite with the fibrinogen and form fibrin.[16]

The peculiar character of the pain of rheumatism is an evidence of the subjection of the sensory nerve fibrils to pressure from the fibrin formed.

The presence of several different organisms in rheumatic lesions as observed by the investigators would indicate that the phagcocytosis being interfered with by the presence of fibrin in the lymph spaces whatever germs might be present in the tissues would develop and multiply, giving rise to the usual acute toxic symptoms, which symptoms would be added to those due to the formation of the fibrin alone, making an acute attack of rheumatism resemble infectious diseases.

The temperature of rheumatism may be Nature's attempt to burn up the debris of imperfectly digested food, or imperfectly eliminated tissues wastes,[17] together with that formed by the toxins of whatever organisms may be present. The sweats are an evidence of a large production of water. I think this is a manifestation of the need of the body for sufficient water to lower the coagulability of the lymph and plasma, the water beforced through the lymph to the sweat glands instead of to the kidneys for elimination. The thirst is another evidence of the need of the body for water, especially during the acute stage; the drinking of large quantites of water containing very little lime during either the acute or chronic stage is known to have a beneficial effect upon the rheumatic lesions. Fibrin being soluble in urea, the most frequent manifestation of rheumatism in the ligaments and tendons of the extremeties could be accounted for by the fact that since they are dense fibrous structures, proportionately little urea would be present in them to keep the fibrin in solution. The selection of the valves of the heart for rheumatic activities is also explainable by the fact that they are dense fibrous structures and that no urea is produced in muscular tissue beyond the

valves, the valves being end structures and of themselves contain only a few muscular fibers.[18] We are told that the connective tissue of the valves is the first part to show tissue change, which is in the nature of a fibrosis; the involvement of the endothelial lining being secondary. (Mayhew.)

The association of tonsillitis with rheumatism may be explained by the fact that the tonsil is largely lymphatic tissue and coagulation of the lymph there would prevent the normal activity of the gland in making its defence against invasion of micro-organisms.

The frequency with which chorea follows rheumatism may be explained in that deposits of fibrin may be associated with connective tissue at or near the affected nerve centers. In investigating the pathology of cholera, Meynert and Schultz have found that "there was general connective tissue thickening and proliferation in the motor tracts of the brain and cord."[19]

The reason why the use of hard water may bring on an attack of rheumatism is because of the calcium supplied by the water forming an excess of calcium salts which, combined with the excess of neucleo-proteid and fibrinogen present, results in the formation of fibrin.

The effect of barometric pressure on rheumatism, especially of the chronic type, is most marked. If infection were the primary cause, why would not the barometer affect other infectious diseases in like manner? To my knowledge, no experiments have been tride with reference to the influence of pressure upon the formation of fibrin in shed blood; but such experiments might show that fibrin formed more quickly under pressure. This would account for the effect of barometric pressure on the disease, or it might be that since carbon dioxide in the blood renders it more quickly coagulable[20] and it is known that the atmospheric conditions influence the amount of carbon dioxide eliminated from the body, so that the influence of the barometer upon rheumatism might be explained with relation to the amount of CO_2 eliminated.

The lesions found in rheumatism are those affecting the lower dorsal segments of the spinal cord, and are known to influence the secretions of the stomach and pancreas, interfering with the normal formation of pepsin or trypsin which, when absorbed with the food into the blood, exercises a restraining influence upon fibrin formation. Lesions at the same point would interfere with the normal activity of the liver.

The use of meats has been mentioned as favoring an attack of rheumatism and that milk was the best food. My experience can scarcely bear this out. I have seen cases of rheumatism improve rapidly while eating freely of steak. Although steak is largely proteid food, it is very poor in lime; while strawberries, which are very rich in lime,[21] may provoke an attack of rheumatism. It is evidently the same in the body as in shed blood that the neucleo-proteids alone nor calcium salts alone will not cause coagulation, but that the presence of both is necessary to form thrombin. A case in point would be that of the Eskimo subsisting largely upon meat, but using soft water obtained by melting snow for drink and suffering very little from rheumatism although exposed to great cold—an etiological factor upon which much emphasis has been placed. I have seen a case of rheumatism develop in a woman of forty-eight, after a fast when nothing but milk or fruit juices had been used as a diet for two weeks. The amount of urea is reduced in fasting. Milk contains, as you all know, a certain per cent. of lime, (1510 milligrams in 100 grams of dried milk), and when taken in large quantities, the lime would amount to considerable, and this with the neucleo-proteids broken down during the fast, I believe was responsible for the condition, together with the decrease of urea formed in the body. I believe rheumatism more prevalent in limestone countries where

the water is heavily charged with calcium, and where much proteid is used for food.

Calcium is necessary to body growth and development and a certain amount is necessary in the food; but it is only in excess or in wrong combinations that it becomes an etiological factor in rheumatism. I have seen the question raised as to the immunity of children under three years to rheumatism,[22] and I believe that it is due to the appropriation of whatever lime may be obtained from the food and water by the bones in which at this age calcification is rapidly taking place, so that no excess is left to become a factor in the fibrin formation. Rheumatism is most apt to develop at an age after the bones have matured, the age between fifteen and twenty-five showing the largest percentage of rheumatic cases.[23]

The tendency of the disease to jump from one joint to another would indicate the field where local conditions most favor the formation of fibrin.

A word might be said with regard to the sheet anchor of the medical treatment for rheumatism which is salicylic acid and its compounds. I conducted a series of experiments upon shed blood, adding a part of a powdered sodium salicylate tablet to the blood and comparing the time of clotting with normal blood. In each instance the clotting was delayed by the addition of a small amount of sodium salicylate. This may be the explanation of the results claimed for rheumatism by the use of salicylic acid and its derivations, but such an effect, even if proven, would scarcely justify the deleterious effects upon the organism as a whole following its use.

The treatment of rheumatism would logically consist of the correction of the dorsal spinal lesions, which may interfere with the formation of any of the digestive secretions or the normal activity of the liver. Of great importance is the correction of the lesions affecting the eleventh or twelfth dorsal segment of the cord. I have never seen a case of rheumatism without lesions in this area. That the correction of these lesions is most important in our work becomes evident, as we note the results upon rheumatic disorders of specific work directed to these corrections. I can confirm the observations of Dr. Harry Still and Dr. Earl Laughlin[24] that in no case of rheumatism treated from the onset by osteopathy have I seen an ankylosed joint or valvular heart lesion. The dietetic and hygienic treatment would include the restriction of food to such amounts as would accommodate the deficient secretions of the stomach and pancreas; rest of the body during the acute stage that the production of CO_2 with its effect upon fibrin formation may be diminished and that the heart may be relieved of undue strain; mild exercise for the chronic cases for the reproduction of urea which will act as a solvent upon the fibrin already formed; a lime free diet and an abundance of water free from the carbonate of lime is indicated. * * *

The fibrin theory has been framed from personal observations and reference to various authorities upon the topics concerned. I have not had the advantage of laboratory experiments to prove or disprove the suppositions. The points given are the merest outline of the evidence obtainable concerning the factors involved in the conditions found in rheumatism. Subsequent investigations may prove the premise false and the theory erroneous, but from the facts at hand at present, the following are the conclusions reached:

1. That the primary etiological factors in rheumatism concern the formation of fibrin under pathological conditions;

2. That any organisms present may be secondary to the fibrosis and aided in their development by the same;

3. That more of the phenomena of rheumatism are explainable under the fibrin theory than any yet offered;

4. The treatment should embrace measures directed to lessen the formation of fibrin within the body tissue;

I believe that the observations of the profession along this line might profitably be recorded, that more definite conclusions might be drawn.

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DISCUSSION

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In discussing a paper upon the subject of rheumatism, I am brought to a realization of my own inadequacy, and am appalled by the voluminous amount that has been written by the medical profession. It is impossible, in the few days since I received Dr. Webster's paper, to do more than make a cursory review of the available literature on rheumatism, and after all, you do not "get anywhere" very fast, because of the many and diverse opinions and theories presented by the writers, none of whom seem inclined to do more than discuss symptoms and the results of experiments in administering numerous drugs.

A few, however, have conceived theories, and have written to great lengths, attempting to bolster up or prove their respective theories and conceptions, as for example, Haig in his "Uric Acid as the Cause of Disease."

But in contrast to this, there is a sad dearth of osteopathic literature on the subject. Indeed, I have looked through every number of the *A O. A. Journal*, and have not found a single article on the subject, only a few short case reports. Has no one in our profession yet attempted to give an osteopathic conception of a disease which amounts to a third of a practice, as you have heard in Dr. Webster's address? Then his paper today, is very opportune. He is bold enough to bring forth a new theory, which as yet has only been hinted at, and I trust that sufficient impetus is gained to have a more exhaustive study and discussion of this subject in the near future.

As Dr. Webster has said, "The etiology of rheumatism has never been explained." He states, that in his opinion (and I take it, his paper is an attempt to prove his point), the formation of fibrin in the blood channels and lymph spaces, is the primary etiological factor, and in quite a masterful way, has marshalled the points in his argument, to prove this. In fact, I believe he has come nearer proving his case than those who have written to such lengths on uric acid, lactic acid or micro-organism theories. In my mind, they all embody some truth and play some part in this disease. Yet, behind all that, it still remains for us to find why the metabolism is disturbed or perverted to such an extent, that any of these factors become pathologic agents. If, as Dr. Webster asserts, fibrin is the chief agent of excitation in this disease, and urea is the natural fibrin solvent, then we must look for the initial trouble in the tissues or organs from which urea is derived.

We are told that urea is formed from the nitrogenous wastes which occur in all tissues, and that the final transformation takes place in the liver. We are also told that fibrin is formed from plasma in this way, viz.: In the plasma, a proteid substance exists called fibrinogen, and from the colorless corpuscles, a neuclo-proteid is shed out, called prothrombin. By the action of calcium salts, prothrombin is converted into fibrin ferment or thrombin. Thrombin acts on fibrinogen in such a way that two new substances are formed. One of these is unimportant, viz.; a globulin which remains in solution. Its amount is very small. The other is important, viz.: *fibrin*, which entangles the corpuscles and forms the clot.

Now, from this we naturally deduct that calcium salts must be injected into either or both, the blood and lymph streams, in more than normal quantities, somewhere between the tissue cells and the liver. This may happen in two ways: either by taking into our system calcium salts by food or drink, in quantities greater than the needs of our body; or by the breaking down of calcareous tissue as waste products thrown into the blood or lymph streams in greater quantites than is

natural in the ordinary metabolic processes. All agree as to the effect of overindulgence in foods too rich in lime, but I have never seen any writing advancing the theory that the excess of calcium salts or lime derivations may come from the products thrown off in faulty bony metabolism I do not know if it will even bear investigation, but I think this is just as reasonable an hypothesis as that of the red corpuscles being derived from the marrow in the long bones.

Bearing on the theory just proposed, I wish to offer the following: The seat of fibrosis in rheumatism is always first in the dense connective tissue around the soft enlarged extremities of the bones forming articulations. Does it not seem reasonable to believe, then, that by some pathologic process or perverted metabolic function, that we do not understand, these bones throw off an abnormal amount of calcium salts or lime compounds which are taken up by the adjacent and contiguous dense connective tissue of the tendons, where it unites with the plasma to form fibrin, as outlined in the formation process above?

In a bad case, does not the calcification of these same tendons, upon the abatement of the acute febrile stage, further bear this out? Do we not know that rheumatism sometimes develops in persons who continually indulge in a practically lime free diet? How do we account for the greatly increased amount of lime deposits in these tissues, if it has not been absorbed directly from the contiguous bones, as is shown in the great proliferation of bone cells? And how do we account for the increased amount found in the urine, also during and after an attack? I may be over bold in offering this theory of the excess of lime coming from the bones in rheumatism through faulty metabolism, but I believe it worthy of special study and investigation.

So much for the formation of fibrin. Now let us look a little more into the prevention of formation or the agents which neutralizes its deleterious activity by keeping it in solution. As Dr. Webster has said, urea is a fibrin solvent, and the formation of urea is perfected in the liver, from the nitrogenous waste products of tissue metabolism. In the acute stage, the urea voided in the urine is greatly below normal, naturally we deduct that urea is not produced in sufficient amounts to hold fibrin in solution, hence the fibrosis, according to Dr. Webster's theory.

It is generally understood that the chief tissue from which urea comes is muscle tissue, although very little urea, as such, is found in muscle tissue, but a substance called creatin is found in large quantities, and that the final transformation of this substance is in the liver. (All tissues send material from their broken down cells.) This, together with the urea ingested with our food, constitutes the sum total of urea in the system. The amount ingested being fairly invariable in the average diet of man, but how about that formed in the liver from nitrogenous waste products? It would seem that we have come to the most likely place to look for the reason for the inefficient amount The liver is unable to transform the waste matter into urea which is necessary to hold fibrin in solution and, shall I say, possibly these unused waste products being thrown back into the blood stream react upon bone tissue to the extent of causing a lime shower (if I may so express it) from the bones, thus hastening the formation of fibrin with its attendant fibrosis of tissues affected.

As all the faulty metabolic processes which we have mentioned point most strongly to liver inefficiency, I believe that organ to be the crux of the situation. All the foregoing seem to prove it, and the constant osteopathic lesions occurring in the splanchnic area ought to be pretty conclusive proof.

Now, let us look for a moment at the part uric acid plays in rheumatism. In addition to the uric acid normally ingested with the food, it is also formed synthetically in the liver from ammonia and lactic acid, which are, of course, tissue waste products, and there is a relationship between urea and ammonia. Kirk says, "The loss of one molecule of water from ammonium carbonate produces ammonium carbamate, the loss of a second molecule of water produces urea," and he further says, "Part of the waste of muscle and other tissue is ammonia."

Thus would it seem that in rheumatism the liver is not only failing in its function in forming urea, but is also failing to synthetize the ammonia and lactic acid into uric acid. Proof of this is found in the decided ammoniacal sweats of the patients. Ammonia is thrown off in large quantities by the sweat glands while the lactic acid is the agent most likely to cause the lime shower, and as evidence on this point, note the action of lactic acid upon the teeth in causing dental caries. (Dr. Leffman.)

What action lactic acid or ammonia has upon fibrin directly, I do not know, but this all goes a great way to prove that it is the liver which is at fault in rheumatism in its failure to provide a fibrin solvent, and clear the system of unneeded calcium salts, ammonium carbonate or carbamate and lactic acid which likely and indirectly favors fibrin formation.

In closing, I wish to again say I am glad Dr Webster has brought to us this view, and whether it proves true or not, I trust a real spirit of investigation from an osteopathic standpoint will be created, and that a disease in which osteopathy has achieved such a brilliant success, will be more fully understood in its etiology.

THE VASOMOTOR CONNECTIONS

(*Illustrated*)

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There is something fascinating about the word vasomotor. Its significance is great, to the keen-eyed, far-seeing physician, whose pride is to control the body functionings through this meshwork of nerves. It is of recent date only that men like Bernard and Langley worked out, almost to their satisfaction, the marvelous intricacies of the vasomotor system. Time was when the sympathetic system supposedly corresponded with its terminology, and its source was thought to be cephalic. Strictly speaking, the superior cervical ganglia is its uppermost portion, from which ascending fibres wend their way upward around the carotid vessels, dispersing here and there branches connecting with certain cranial nerves.

Scientific problems appeal to scientific minds, and accuracy should ever be paramount. To register mechanically the slightest variation in the size of organs, through the expanding and contracting of the blood vessels contained within their bounds, is more than interesting, to say the least; but to control the blood supply to various tissues and organs, through the vasoconstrictors and vasodialators, reducing congestion, and abating fever, is more than interesting.

The total amount of blood in the body remains practically the same. An organ fluctuates through its vasomotor supply, producing an effect upon the remaining organs of the body in proportion to the specific vascular irregularity. Likewise, vasomotor variations in the remaining organs will produce a change in the organ under observation. In order to regulate the normal vascular supply of any organ in the body, proportionate regulation of the remaining organs must be made. If a vasoconstrictor effect exists in one portion of the body, its effect is accurately recorded on the remaining parts. If congestion exists in certain tissues, an anaemic condition is manifest in the remaining tissues in proportion to the area involved and the vasomotor disturbance induced.

(Paper read before the Toronto Osteopathic Socitey, February 25, 1912.)

To understand properly the vasomotor system we must touch briefly upon the autonomic system, and in the analyzation familiarize ourselves with the proper connection between it and the cerebro-spinal system, keeping in mind that the origin of pre-ganglionic fibres is restricted primarily to certain spinal regions (Fig. II and III); as the first thoracic to the second lumbar; the second to fourth sacral, not considering central connections; and tracing these pre-ganglionic fibres from their origin through the nerve roots into prevertebral ganglia, thence to distant ganglia, ending in cells there to become post-ganglionic fibres, possibly to return to a similar plane in a spinal nerve, or at a different level.

Starting as high as the third cranial nerve we can readily trace pre-ganglionic fibres into the ciliary ganglia (Fig. III), and then post-ganglionic through the short ciliary nerves into the iris and ciliary muscles. Dropping then to the seventh, ninth and tenth cranial nerves we find similar connections and communications with ganglia through the trifacial, such as spheno-palatine, otic, and sub-maxillary. Occasionally the eleventh is included but cephalic autonomic connections are usually confined to the third, seventh, ninth and tenth cranial. The vasoconstrictor and vasodilator nerves while existing as separate nerves often run together in the same tissue or sheath.

The great majority of vasoconstrictor fibres in the body emenate from the thoracic section of the spinal cord (Fig. II and III). Likewise the vasodilators are most commonly traced to this same por-

tion of the dorsal cord, and in order to secure perfect vasodilation of the facial tissues we must again resort to the stimulation of the upper thoracic nerves, second to fifth in particular. From these through the first thoracic ganglion, entrance is made by way of the inferior cervical ganglion upward to the carotid or cavernous plexus.

In Fig. III, illustrating this article, we have shown the section of the spinal cord, from which the great outflow of vasoconstrictor fibres takes place. We have removed vertebral sections from the first dorsal to the second lumbar, to demonstrate the area of the spinal cord from the second thoracic to the lumbar nerves.

Without proper nervous control the vascular system fails in its physiological function, that of maintaining a high arterial pressure. The integrity of these controlling nerves depends on normal reflex impulses and nutritive properties. Perfect regulation means everything to an organ, if normal activity is expected. It is easy to demonstrate the fluctuation in a gland or organ through stimulation of the nerves going to them. Normal stimulative impulses to a gland depend on the integrity of the nerve centre from which the nerve originates. If the acting nerve centre is subsidary, reflex disturbance may influence conditions to a greater or lesser extent than if the centre be medullary; or still higher, cephalic, which borders on the psychical. If a vascular area is involved to any great extent, a perceptible difference in the pressure is likely to be noted in other organs, and possibly in the larger blood vessels, causing a general rise in blood pressure. That is if the vasoconstrictors are involved; the vasodilators prove the reverse.

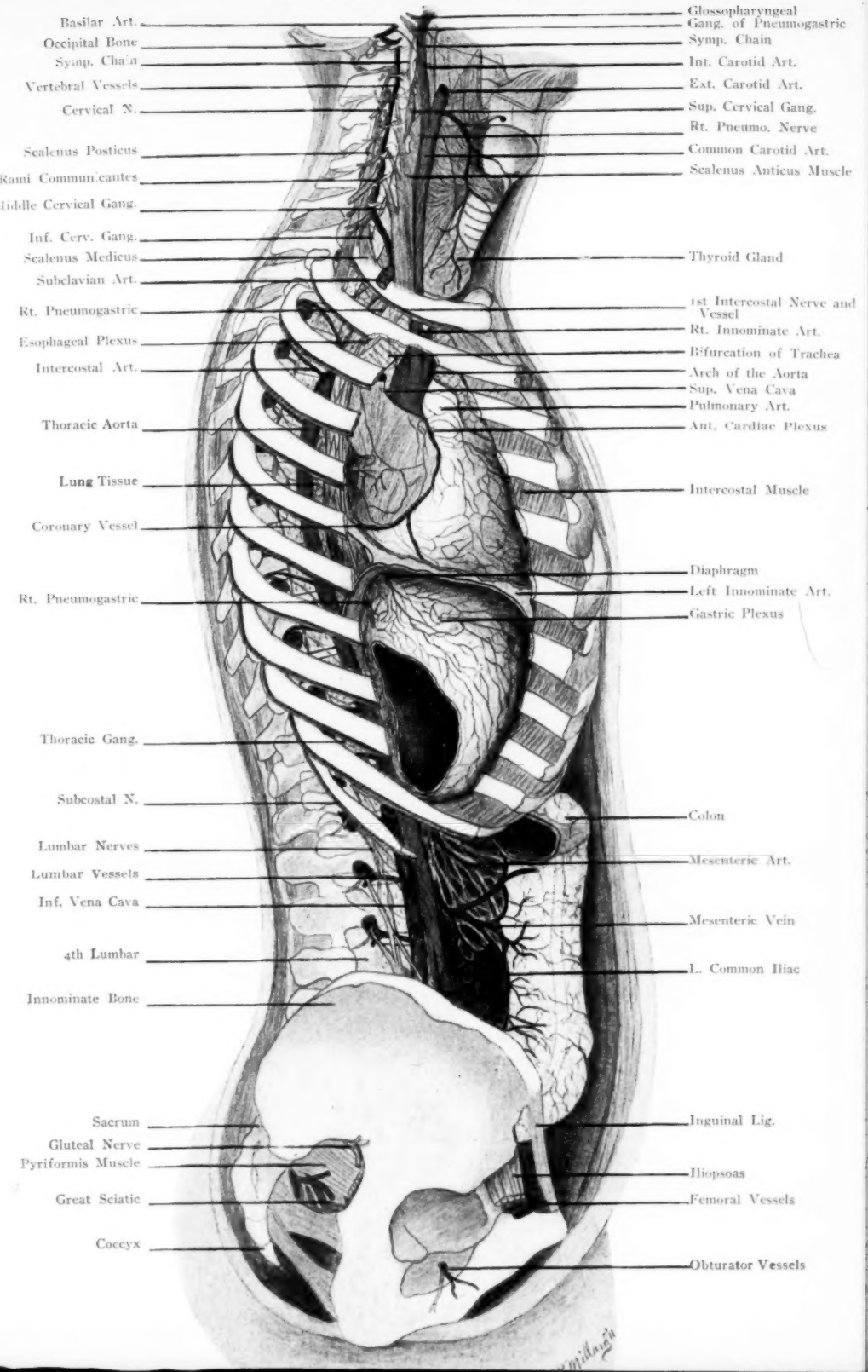
The vasoconstrictor nerve fibres are constantly in some degree of action, and variations may be noted if certain vasomotor nerve tracts are interfered with. For instance, vascular congestion of the abdominal vessels may result if the splanchnic nerves are disturbed. A normal tone must exist in order that the vasoconstrictor impulse be not intercepted.

Splanchnic nerves contain pre-ganglionic fibres, which terminate usually in the celiac ganglion, which is quite contrary to the nerve impulses supplying tissues in which the pre-ganglionic fibres terminate in the pre-vertebral sympathic ganglia. This arrangement of autonomic fibres in the splanchnic region complicates normal tonic activity of the vasoconstrictor fibres, which leave the cord in that region. Any interception, or vasomotor disturbance, will impair the tonic activity, producing reflex symptoms in proportion to the disturbed area.

The general vasomotor centre exists in the medulla. The axons coming from the cells in this centre, descend in the spinal cord, and leave by way of the anterior horns at the various levels. It is easy to deduce the significance of vascular regularity in the vertebral arteries which supply, by uniting into the basilar, a part of the circle of Willis. If the supply of the brain depends on the regular vascularity through the vertebrals and carotids, equalized in this circle, cervical lesions must affect directly or indirectly these vascular tissues. We are dependent on the reflex activity of the nervous system for vascular regulation; the vasomotor mechanism being the more direct, but, we must take into consideration the cardiac nerves also.

So delicate a system is the vasomotor, that the muscular coat in the walls of the arterioles is affected to a certain extent by the internal pressure through distention of these vessels by the heart action. This mechanical stimulus tends to increase the tone, and the arterial tension is thus regulated and maintained. If any organ is congested through vasodilation, the remaining body tissues are necessarily deprived of a vascular supply equal to the excess in the organ. The reverse is true when the vasoconstrictor integrity is disturbed, producing a constricted condition of the organ's vessels, with consequent

VASOMOTOR SYSTEM



REFERENCES FOR CHART II

Vasomotor Nerve Connections—Anterior View

1. Medulla.
2. Cardiac Nerve.
3. Superior Cervical Ganglion.
4. Second Cervical Nerve.
5. Gray Ramus (post ganglionic).
6. Middle Cervical Ganglion.
7. Inferior Cervical Ganglion.
8. Ansa Subclavia.
9. First Thoracic Ganglion.
10. First White Ramus (pre-ganglionic).
11. Thoracic Vertebrae removed showing spinal cord and nerves.
12. Anterior Spinal Artery.
13. Fourth Thoracic Ganglion with white and gray rami.
14. Termination of Spinal Cord (filum terminale).
15. Second Lumbar Nerve with post-ganglionic connection.
16. Lumbar Ganglion.
17. Lumbo-Sacral Cord.
18. Sacral Ganglion.
19. Small Sciatic.
20. Ganglion Impar.

REFERENCES FOR CHART III

Vasomotor Nerve Connections—Lateral View

1. Optic Nerve.
2. Ciliary Ganglion.
3. Ophthalmic Division of the Trigeminus.
4. Gasserian Ganglion.
5. Superior Maxillary Division.
6. Spheno-palatine Ganglion.
7. Chorda Tympani Branch of the Facial.
8. Lingual Branch of the Inferior Maxillary Division.
9. Glosso-pharyngeal.
10. Hypoglossal.
11. Pneumogastric.
12. Sub-Maxillary Ganglion.
13. Superior Cervical Ganglion.
14. Superior Laryngeal Nerve.
15. Superior Cardiac Nerve.
16. Fifth Cervical Nerve.
17. Superior Cervical Cardiac Branch of the Vagus.
18. Middle Cervical Ganglion.
19. Middle Cervical Cardiac Sympathetic Branch.
20. Inferior Cervical Ganglion.
21. Inferior Cervical Cardiac Branch of the Sympathetic.
22. First Thoracic Ganglion.
23. Second Thoracic Ganglion with both gray and white rami.
24. Anterior Root of the 3rd Thoracic.
25. Posterior Root of the 4th Thoracic.
26. Upper Branch of the Great Splanchnic.
27. Spinal Cord showing anterior and posterior nerve roots. (The vertebrae from 1st dorsal to 3rd lumbar have been removed to show the region from which the great outflow of vasoconstrictor fibres emanate.)
28. Great Splanchnic Nerve containing pre-ganglionic fibres of cerebro-spinal origin.
29. Semilunar Ganglion.
30. Small Splanchnic Nerve.
31. Least Splanchnic Nerve connected with—
32. Renal Plexus.
33. Termination of Spinal Cord.
34. Second Lumbar Nerve with gray and white rami.
35. Lumbar Ganglion.
36. Hypogastric Plexus.
37. Sacrum, lower part cut away to show nervi-erigentes (2nd to 4th).
38. Second Sacral Ganglionic Branch.
39. Great Sciatic.
40. Ganglion Impar.
41. Coccyx.

Color Plates Engraved and Printed by The Chronicle Press, Orange, N. J.

Vasomotor System Connections

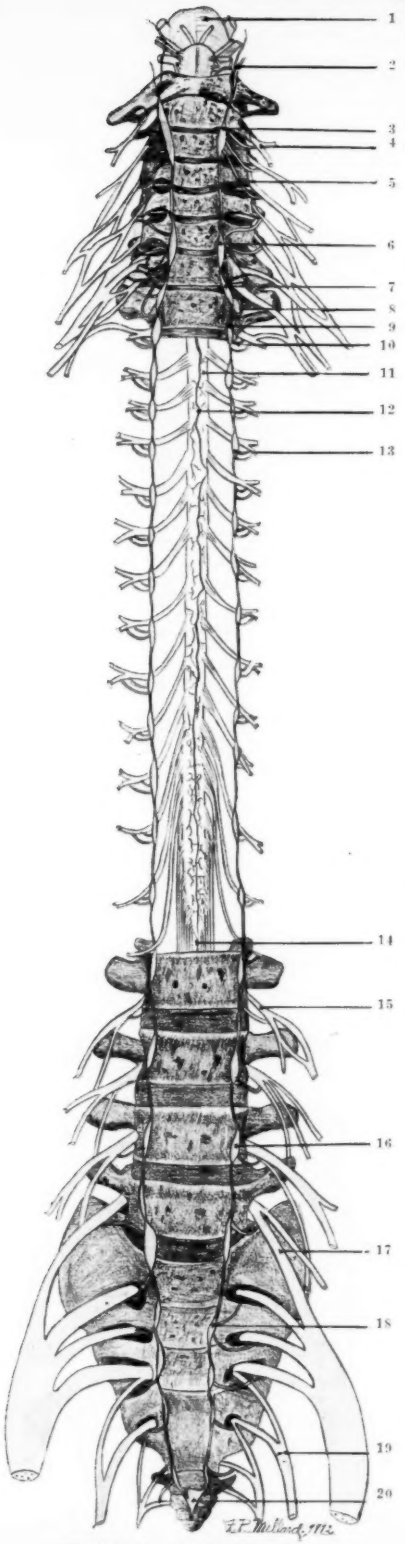


CHART II. (Anterior View)

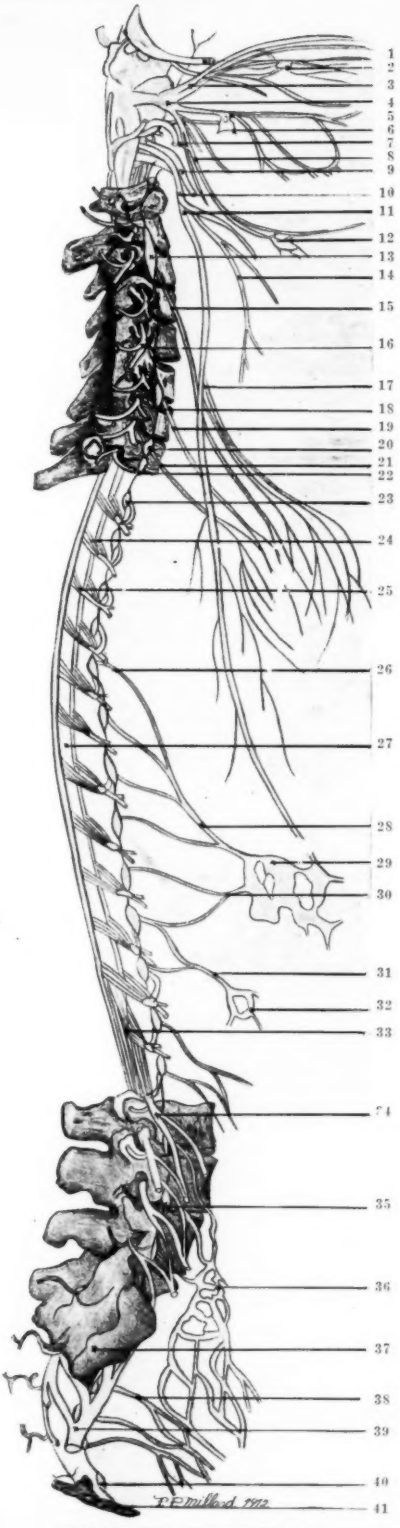


CHART III. (Lateral View)

congestion of the remaining bodily tissues. These variations must be accounted for in the way of reflex stimulation or inhibition of the vasomotors.

We have to deal with the vasoconstrictors from a more active standpoint, as a tonic condition is constant, while the vasodilator condition is quite intermittent, which is easily explained from the fact that arterial tension must be sustained, and retained, in order that normal regularity of the vascular system exist in all tissues and organs. Tonic activity of the vasoconstrictors means perfect integrity of the tissues supplied by those nerves.

In considering the vasomotor system we must remember that in its entirety, it must be referred to, and that if one reflex arc is disturbed through whatever means, whether it be vasomotor disturbance, or what not, the abnormal condition does not rest at any fixed point, but one reflex disturbance brings on another until the entire system is more or less involved, and unless correction is made, whether it be the way of osseous lesion, or a discrepancy of any sort, the primary cause must be corrected in order that perfect regularity my be restored.

In Fig. I, illustrating this article, we have endeavored to show the vasomotor system more or less in its entirety. The two main features of the vasomotor system in particular are emphasized. First, the vast area controlled by the splanchnic nerves through the celiac ganglion in particular; and, second, the area controlled through pre-ganglionic fibres terminating in the pre-vertebral ganglionic chain, from which the post-ganglionic fibres arise, in contrast with the area just mentioned, in which the post-ganglionic fibres arise from the celiac ganglion.

We must keep clearly in mind the distribution of the white rami, confined practically to the spinal cord area, shown in Figs. II and III, in which the vertebrae have been removed showing the spinal cord in situ, and from which region the great outflow of the vasoconstrictor fibres come. Outside of the interesting phenomena demonstrated in the splanchnic region, the cephalic should receive the most attention. We are almost entirely dependent on the first thoracic ganglia, or the inferior cervical, for impulses transmitted to the cephalic organs and tissues. If there exists a spasm of the central artery of the retina, threatening atrophy, due to malnutrition, we must depend on cervical and upper thoracic impulses to re-establish normal vasomotor conditions. If it should not be true that the cerebral vessels contain vasomotor fibres, we still have influence over these vessels at least through the vasomotors found in the walls of the carotids and vertebrals.

It seems almost impossible to emphasize some small points sufficiently; what we might term insignificant features; but if nutrition is controlled by the nervous system, and stimulation is a necessary feature in nervous tissues, no point should be too small to consider. The vasomotor nerves control nutrition, and the normal integrity of cells depends on the fluids bathing these tissues. We must take into account the fact of nutritive control by way of the vasomotors on the cellular tissues. Normal activity of these nerves must be sustained also. Even the lymph has to do with cell nutrition. The lymph is a part of the blood system, and is in continual movement if normal, and obstruction produces pathological phases as well as if it were in the venous or arterial system. This drainage system with its lymphatic ducts, although slow and imperfect in some respects, has to deal with the direct exchange between the capillaries and lymph spaces.

In summing up the significant parts of the vasomotor system, we should be leaving out the most important part, if we did not make the true osteopathic lesion applicable. We have shown, in

this article how the various regions of the head may be reached through influences by way of the first thoracic and inferior cervical ganglia, and we have shown in the cuts the area in which the white rami leave the spinal cord to communicate with the pervertebral ganglionic chain. We have also called attention to the vast splanchnic area in which the vasomotor system varies, in that the pre-ganglionic fibres enter and leave the prevertebral ganglia as the same fibres, unite reaching the celiac ganglion. It is impossible to emphasize all of the centres in which we may secure direct vasomotor effects, but we are certain of special areas, such as those already referred to, as well as of the bronchial and lung tissues, which are reached through the upper thoracic, the second to fifth in particular, and then by way of the cervical ganglia to the pneumogastric, which conveys impulses to the pulmonary plexus. If we stimulate in the region of the upper thoracic, we produce a sensory effect which increases the vasoconstrictor impulses, and the contrary effect may be seen in part by inhibition.

by variation of impulses through the sensory nerves will affect the vasomotors in certain areas especially in that area from which the impulses arise. It is in the cervical and upper thoracic region usually that we can produce the greatest vasomotor effects. The arrangement and connections between the cervical and upper thoracic sympathetic ganglia, and their almost direct control over the blood vessels supplying the bulbar centre of the vasomotor system, make this region vital in reference to osseous lesions. As the cervical and upper dorsal vertebrae are most prone to misalignment, and as the nearer we approach the bulbar centre the more direct the influence on this centre, lack of vascular integrity and nervous equilibrium would emphasize most strongly the need of corrective work in this particular region.

We must maintain, and sustain, perfect intactness anatomically, and regularity physiologically, in order that the tissues and organs may functionate properly.

4 Richmond St., East.

THE CERVICAL REGION[1]

ANATOMY AND PHYSIOLOGY

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From the osteopathic standpoint, the applied anatomy of the first and second cervical segments includes the anatomy of the atlas, axis and occipital-bone, the connecting ligaments, the normal movements of the articulations, possible lesions of the structures considered that may cause perverted function, the structures that may be affected and the character of the affection.

The occipital-bone and atlas are connected by six ligaments: the anterior and posterior occipito-atlantal, two lateral and two capsular, including the synovial membranes. The attachment of these ligaments together with the peculiarity of the articulating facets permits of elevation and depression of the head, or nodding movements, and possibly some lateral sliding. I have found little or no rotation under normal conditions, but Hulett says that this normal movement does exist. Connecting the atlas and axis are five ligaments: the anterior and posterior atlanto-axial, the transverse, which, together with the posterior surface of the anterior arch of the atlas, forms the articulation with the adontoid process of the axis, the two capsular and the synovial membranes. Between the atlas and occipital-bone there are four ligaments: the occipito-axial, which appears to be the continuation of the posterior common spinal ligament, and the

[1] Paper read before the Osteopathic Society of the City of Greater New York, December, 1906, and by request read before the same body December 14, 1912.

three check ligaments. The atlanto-axial articulation permits of rotation of the atlas and with it the cranium upon the axis, but the extent of rotation is limited *by the check ligaments.*

As to the lesions of the vertebrae in question, many and varied opinions have been expressed by those whom I have consulted, but I will deal only with the more important of those I have met. The conditions of anterior atlas, regarded by some as an anterior slip of that vertebra itself, which I think is hardly possible owing to the anatomical arrangement of the odontoid articulation, I have found to be a rotation anteriorly of the occiput upon the atlas, a condition of forced flexion anteriorly. This may be demonstrated by comparing the vertical axis of the cranium with the antero-posterior diameter of the atlas. The opposite condition, or forced extension, I have found existent in the so-called posterior atlas. Next in importance I have found the lateral lesion, or a flexion to the right or left of the occiput upon the atlas.

Another common condition is the rotary lesion or torsion. This may be a simple rotation of the occiput upon the atlas, or rotation with flexion, laterally, anteriorly or posteriorly. As to the lesions of the axis, the rotary lesion or torsion is most common, but with this lesion may be associated any lesion of the atlas and occipital-bone. As to the entire anterior, posterior or lateral subluxation of the axis alone, I have a doubt, unless it be co-existent with a similar condition of the atlas, owing to the attachments of the transverse, odontoid and anterior occipito-axial ligaments. However, I do not deny that such conditions may exist, for I may have failed in their detection. Another condition quite common is the approximation of the spinous process of the axis and the posterior arch of the atlas, and if my premise is correct, this is a slight tipping forward of the axis due to contracture of the posterior supra-axial ligaments and muscles, simulating a posterior subluxation of that vertebra. Again, there may be a combination of one or more of these lesions, such as a rotation or lateral swerve, involving one or more vertebrae below this point.

We, as "bony-lesion osteopaths," if I may be allowed the expression, often ignore in our diagnoses and explanations the presence of ligamentous and muscular lesions. These do exist at times, and independently of the bony lesion, but though they do they invariably cause a bony derangement, if their existence is prolonged. I mean by these, the contractures and strains brought about by mechanical or thermal influences sufficient to cause an abnormal contiguity of the tissues within themselves. However, we seldom get this condition of primary contracture except early in a case, the composite lesion being the most prevalent.

Besides these, we must not lose sight of those lesions secondary to muscular contracture, induced by abuse of function, causing reflex irritation to the spinal centres supplying these muscles, or through direct irritation to those centres by toxic materials in the blood stream. This class of lesions is exemplified in the case of diphtheria in an apparently healthy child. Through exposure the post-cervical muscles become contractured, interfering with the drainage of the upper cervical and dorsal segments. This irritates the nerve cells located there, resulting in a vaso-motor disturbance, following which is a congestion and lowering of vitality in the mucosa of the upper air passages. This condition is the "diathesis" and "peculiar dyscrasia" assigned by medical authorities as the predisposing cause of all infectious and contagious diseases. The devitalized tissues form the nidus for the propagation of the Klebs-Löffler bacillus. The toxins formed by these bacteria circulating in the blood stream produce such an irritation to the spinal centres that a tonic contracture results, especially in the already devitalized structures near the seat of infection.

Now arises the all-important question as to how lesions cause perverted func-

tion. Some say by pressure on nerves, but this explanation is too general, although it may suffice at times in satisfying the curiosity of a new and disinterested patient, and often leads us into inexplicable difficulties. I do not deny that this is the case with some nerves, but with the spinal nerves a great deal of pressure must be exerted before irritation is sufficient at that part of the nerve to cause abnormal functioning, since these nerves have a "comparatively unyielding sheath and prolongation of the spinal membranes" along their course through the intervertebral foramina. There do exist conditions following lesions in which there has been injury to the nerve in the foramen, causing laceration of some of its fibres with partial or complete paralysis, but such cases are generally the result of fracture or complete dislocation of the vertebrae and need surgical intervention.

My belief is that the principal effect of the bony lesion is an interference with the circulation to those nerve cells originating the abnormal impulses, and this is accomplished by direct pressure upon, or disturbance of, the vaso-motors of the intervertebral artery and vein by contracture of the vertebral ligaments which are supplied by the recurrent spinal nerve and and sympathetic filaments from the posterior nerve-root ganglion. It must be borne in mind that pressure may be exerted upon vessels other than these, but this pressure is caused by secondary ligamentous or muscular contracture. This explanation may be somewhat general, but it will help us the more in the application of these conditions to the segments dealt with.

Surrounding the first and second cervical segments are the spinal membranes separated from the bony canal by a plexus of veins whose function is to drain the spinal cord, ligaments and vertebrae. These connect with the vertebral veins through intervertebral foramina and with the dorsi-spinal at the sides of the spinous processes. The dura mater is connected with the posterior spinal ligaments, so it could be affected by any strain to which that ligament might be subjected, and the spinal plexus of veins is quite susceptible to interference as it is confined in a limited space. The anterior and posterior nerve-roots of the first and second cervical nerves join in the foramina, and in the first the posterior ganglion lies in the foramen. The common trunk of the first nerve makes its exit from the cord between the occipital-bone and atlas, through the groove behind the superior articular facets. This groove and an opening in the posterior occipito-atlantal ligament form the foramen. The second nerve makes its exit between the posterior arch of the atlas and the lamina of the axis. The first lies beneath the vertebral artery, the second to the outer side. The vertebral artery, after coursing upward from the subclavian through the transverse processes of the sixth to first vertebrae, inclusive, winds backward around the lateral mass of the atlas, enters the spinal canal, thence through the foramen magnum to form the basilar, the terminal branches of which anastomose with the carotid system to form the Circle of Willis which equalizes the cerebral circulation. Before terminating in the basilar the vertebral gives off the anterior and posterior spinal arteries which anastomose with the intervertebral, branches of the vertebral and inferior thyroid, forming the lateral spinal by connecting above and below with its fellows, also giving off a branch direct to the segment adjacent.

Then in each foramen are a nerve, an artery to supply the cells of origin of its fibres and a vein to drain these cells.

The anterior divisions of these nerves go into the composition of the superficial cervical plexus, while the posterior divisions supply muscles and integument in the post-cervical region. The first cervical nerve communicates with the second cervical, ninth, tenth and twelfth cranials and the superior cervical ganglion. It is motor to the recti, oblique, complexus, genio and infra-hyoid muscles, and is

sensory to the back of the head, the atlanto-occipital articulation and the mastoid cells of the temporal bone. The second communicates with the first and third cervical, ninth, tenth, eleventh and twelfth cranials and the superior cervical ganglion. It is motor to the anterior rectilongus colli, splenius, complexus, genio and infra-hyoid, trachelo-mastoid, oblique and multifidus muscles, and is sensory to the back of the head as far as the vertex, the atlanto-axial articulation, the pinna, the face over the parotid gland and the anterior part of the neck.

From the lateral tracts of the cord as low as the sixth cervical segment arise the spinal roots of the spinal-accessory, which pass upward through the foramen magnum to join the bulbar portion before it makes its exit through the jugular foramen. This nerve, according to Landois, contains all the inhibitory fibres transmitted to the cardiac plexus by the vagus, and the majority of the muscle-sense fibres distributed by the first and second cervical nerves.

Situated in the posterior horn of the grey matter of the cord as low as the second cervical vertebra is the lower sensory origin of the trigeminal, the upper and motor portions originating in the floor of the fourth ventricle. The sensory roots of this nerve, according to Landois, are connected with the motor roots of all the cranial nerves with the exception of the second, which probably accounts for the various reflex disturbances following irritation to it, centrally or peripherally. The cells of origin of the remaining cranial nerves are above this point and as these centres receive their vascular supply from the terminal branches of the carotid and vertebral systems, they are most susceptible to abnormal functioning following any disturbance to those arteries.

In the medulla are located the independent nuclei of the eighth, ninth, tenth, eleventh and twelfth cranials, the respiratory, vomiting, higher cardiac- and vasomotor centres, and the circulation to these is dependent upon the relation of structures at the base of the occiput. The superior cervical ganglion, lying on the anterior rectus and behind the carotid sheath, is quite susceptible to interference by change in relation of the surrounding structures. This ganglion transmits vasomotor and trophic impulses to the entire contents of the cranial cavity via the carotid and vertebral arteries, and the third, fourth, fifth, sixth and ninth cranials. It also gives off the superior cardiac nerve and branches to the pharyngeal and thyroid plexuses.

In the cells of the first and second cervical segments originate impulses of different character, principally motor, sensory, vaso-motor, secretory and trophic. Following a lesion of the atlas or axis is a stretching or straining of the connecting ligaments. This interferes with the recurrent spinal and sympathetic fibres, causes a reflex condition in which there is congestion followed by the thickening of the ligaments. This thickening may possibly cause unnatural pressure to be exerted upon the vertebral and intervertebral arteries, followed by a possible anemic condition of the segmental and higher centres. But at the same time the outflow of venous blood is impeded and a passive congestion of these centres exists. What follows? The presence of the excess of venous blood causes irritation to the nerve cells, hence hyperactivity, such as contracture of muscles supplied by nerves originating in these centres. This impairs their drainage and they become sore and irritable. The deep origin of the cranial nerves become congested. Their functional activity becomes abnormal or perverted, and through the first there may be interference to the sense of smell; the second: impaired vision, atrophic conditions and various retinal complications; the third: faulty accommodation, muscular difficulties, ptosis and diplopia: the fourth: possible diplopia; the fifth: catarrhal disturbances, as nasal catarrh,

mastoiditis, otitis media and inflammatory conditions of the eye, neuralgias, trophic disorders of the skin, disturbance to mastication and general cerebral inactivities: the sixth: internal strabismus; the seventh: Bell's paralysis, choreic twitchings of the face, disturbed salivation through the chorda tympani and interference with taste and perspiratory activities of the face; the eighth: tinnitus aurium, disturbed hearing, auditory hallucinations and vertigo; the ninth: bulbar paralysis, loss of sensation in the palate, glottis, posterior portion of the tongue and tonsils affecting mastication and deglutition, thyroid disturbances; the tenth: impaired deglutition due to the impairment of pharynx and oesophagus, respiratory disturbances, functional heart difficulty and impaired gastric, pancreatic and glycogenic secretory functions; the eleventh: wry-neck, paralysis of larynx and posterior part of palate and functional heart difficulty; the twelfth: impairment of speech and deglutition.

All of these nerves may be further impaired by chronic contracture of the muscles supplied by the first and second cervical nerves. The congested and cramped position of the superior cervical ganglion acts co-operatively with these abnormal functionings of the cranial nerves, and in addition there is disturbance of function in those structures supplied by fibres passing through the ganglion but of remote origin, such as accelerators to the heart and pupilo-dilators, both originating in the upper dorsal segments.

This is by no means an exhaustive application, but simply typical of some of the results that may follow a recent lesion. If time permitted, the same application could be made to those conditions of cord and cerebral lesions giving origin to the various spinal and nervous diseases.

In conclusion I will mention a few points relative to the correction of the lesions in question. The first essential is to find out if there is really any abnormality of structure, and if there is, its character. This may be ascertained by inspection and palpation, noting the general contour and degree of mobility at point of articulation, the condition of adjacent structures as to tenderness, thickening, contracture, trophicity, temperature and color of the skin. Attention should be paid to the sensitiveness and age of the patient, and it is well to be positive as to presence of deformity which often exists in lesions of the atlas and axis in young individuals. When a positive diagnosis of the abnormality is made it is ample time to consider correction. If the condition be acute with muscular contracture and slight mobility with tenderness at point of articulation, but no gross subluxation, then careful relaxation of the tissues, restoration of mobility and the normal relation of the bony structures is all that is necessary. When this is accomplished, it is best to leave the case alone and allow Nature to assert her authority. If the condition be chronic, care must be exercised not to attempt a hasty correction, for in such cases Nature has attempted to adjust function to the abnormal structural derangement, and if an abrupt change be made the efforts of the operator may prove disastrous for the time being, if not for all time, much to his chagrin.

As to the technique, that is a matter of individual taste and experience. We are taught that exaggeration, flexion and rotation are the principles to follow, but no stock manipulation can be successfully used in all cases of the same character. The only rule to follow is to make an individual study of each case, then make a mechanical application of the anatomy and physiology of the region in question, and the majority of lesions may be reduced if no deformity exists.

187 Madison Ave.

MECHANICS OF THE ARTICULATIONS

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Mechanics is that divison of physics which treats of the principles involved in the construction and action of machines. In consequence we find the term animal mechanics frequently applied to the consideration of those functions of the body which resemble the action of machines. Physics is the science of nature or natural philosophy and the physician in the true sense of the term means one having a knowledge of nature's laws and phenomena.

In the human machine a combination of mechanical powers is used for the transmission of force and the distribution of energy. Chief among these is the lever, the elements of which are the power, the weight and the fulcrum. According as these three elements vary in relative position to each other, a lever is said to be of the first, second or third order. In levers of the first order, the fulcrum is between the weight and power, or the middle one of the three; in the second order, the weight is in the middle; in the third, the power is in the middle.

All the joints of the body which are endowed with motion belong to one or another of the three orders of levers. Of the first order, the movement of the skull on the atlas is an example, the face being the weight and the posterior cervical muscles the power; of the second order, the ankle joint is an illustration—when we raise the body upon the toes, the weight is then in the middle, the ball of the great toe being the fulcrum, and the muscles on the back of the leg the power; of the third order, flexing of the forearm on the arm is an example—the power being in the middle represented by the attachment of the biceps muscle, the hand the weight, and the elbow-joint the fulcrum.

Address before the Osteopathic Society of the City of Greater New York, May, 1912.

In the structure and operation of the joints, great perfection is shown in the means adopted for reduction of or avoidance of friction. The bones are covered by elastic cartilage, which is coated by a membrane presenting a remarkably smooth surface; this, in its turn, is lubricated by synovial fluid, more lubricating than any oil, and renewed as fast as required. No human invention approaches in its perfection that attained in the construction of joints in animals.

The spinal column must combine strength with mobility, for, as the axis of the skeleton, it has to bear weight and resist shocks. For this reason, and to avoid injury to the contained spinal cord, it is necessary that the movement between any two vertebrae should be slight, while that of the column, as a whole, is very considerable. Motion occurs in all directions around the pulpy portion of the discs as a centre, and is limited in part by the ligaments, in part by the articular processes, which thus steady the column. In the neck all movements are permitted by the obliquity of the articular processes. Extension is more free than elsewhere, and flexion is freer, but less so than in the lumbar region. Lateral flexion is more extensive than in any other region, but it is a combination with rotation.

In regard to motion and power as exhibited by muscles, the following statements may be made: The longer the fibres of a muscle, the more extensive is the motion it can make and the greater its power. The power of a muscle increases as the number of its fibres increases, and at the rate of about 500 pounds per square inch. The muscle whose transverse section has the greatest area will have the greatest power. Other things being equal, the proper use of a muscle will increase its power to a certain extent.

The muscles which extend the trunk are always more powerful than those by which it is flexed, and as it is the antagonistic play of these muscles which keep the body erect, the proper balance must

be maintained by the nervous system. Almost every joint is the theater of such plays of antagonistic muscles, which serve the double function of keeping the bones in proper position with regard to one another, and of producing movement at the joint, the amount of this movement being limited by the slack but inextensible connective tissue ligaments which bind the bones together.

Obviously the maintenance by the nervous system of the proper balance in the action of these antagonistic groups of muscles is essential to correct carriage of the body, and the education of the consciousness of this correct posture is most essential to muscular efficiency and general good health.

In the erect posture the head, neck, and trunk, with all its appendages, are kept poised on the heads of the femurs by the vigilance of the muscles; and it may be demonstrated that there is no position in which all the muscles acting on the trunk take their proportionate share of action so nearly as when the body is in the perfectly erect attitude. The idea that the human frame is not a perfectly self-supporting machine in the erect posture, and is therefore in this respect inferior to the lower animals, can be proven false by the laws of mechanics.

We hope to see the day when the normal human structure will be universally considered the most perfect piece of mechanism in existence and we believe the development of osteopathic mechanics will be the most potent factor in proving it. Thus far we have considered the mechanics of the human framework in general. The mechanics of the cervical spine may be described briefly as follows:

The skull is a lever of the first order, in which the power is derived from one or more muscles, assisted at times by the weight of the head; and in which the weight is also derived from one or more muscles, assisted at times by the weight of some part of the head. For instance, when the head is flexed, the weight of the head will co-operate with the flexors in antagonizing the power of the extensors. In fact, any one group of muscles acting on the skull may be considered the power, while the antagonistic group may be considered the weight. When the body and the head are in the upright position, all the motor muscles of the skull co-operate and the antagonistic groups of muscles are in equilibrium.

The skull has the following motions, namely: Flexion, extension, right and left rotation and right and left adduction. The flexion and extension of the skull takes place mostly at the occipito-atlantal articulation. The rotation of the skull takes place mostly at the atlanto-axial articulation. The adduction of the skull takes place mostly in the cervical spine below the axis.

The following description of the cervical mechanism is selected from Dr. M. E. Clarke's "Applied Anatomy," and only those effects of cervical lesions have been noted which disturb the mechanical integrity of the framework:

> The atlas is the most peculiar of the vertebrae, in that the body is absent, its place being occupied by the odontoid process of the axis. This is of interest, since complete dislocations result in pressure on the spinal cord by the odontoid process from breaking of the transverse ligament, and paralysis of all parts below follows if pressure is constant and long continued. The absence of the body of the atlas makes it thinner, thus permitting of freer motion of the head on the spinal column, in accordance with the general rule that the smaller the vertebrae the greater the arc of mobility. The superior articular facets are peculiar on account of their shape, size and directions that they face. These facets are oval shaped, deeply concave from before backward, converge in front and incline obliquely inward. They are often indented, in which cases they are divided into two unequal parts, thus lessening the mobility of the joint. They receive the condyles of the occipital bone, thus forming a rather secure articulation. On account of the depth of the concavity of the superior facets of the atlas and the prominent convexity of the occipital condyles, dislocation of this articulation, either partial or complete, is rare.
>
> By muscular contracture the occiput and atlas are approximated, this of itself lessening the mobility of the occipito-atlantal articulation.

The principal movement of this joint is an antero-posterior one, permitting of a nodding movement of the head.

The head is so poised on the superior articular surfaces of the atlas that it requires little muscular effort to keep it balanced. If the occiput or atlas become changed in position as result of subluxation, the balancing of the head becomes more difficult; that is, more muscular effort is required to keep the head in a normal position.

Since the cervical ligaments have little or nothing to do with the balancing of the head, and since the muscles connecting the head with the spinal column are the principal factors concerned in holding the head erect, it follows that any disorder of these muscles or of the joint itself, will interfere with this function.

The axis, so named because it forms a pivot around which the head and atlas rotate, is the strongest, and next to the atlas, the most peculiar vertebra in the cervical region. The most striking peculiarity is the adontoid process which provides attachment for the check ligaments that limit rotation of the head. The atlanto-axoidal articulation permits of nearly all movements, the facets being very shallow.

Rotation of the head and atlas on the axis is the most important.

In a supposed lesion of this articulation a test of mobility should be made, there being some restriction to the normal degree of rotation of the head if a lesion exists. The ligaments involved by an axis lesion are those uniting the axis to the atlas, the occiput, and the third cervical.

In speaking of the occipito-atlantal and the atlanto-axoidean joints, Morris says: "The ligaments which pass over the odontoid process to the occiput are not quite tight when the head is erect, and only become so when the head is flexed. If this were not so, no flexion would be allowed; thus muscular action, and not ligamentous tension, is employed to steady the head in the erect position.

"It is through the combination of the joints of the atlas and axis, and occiput and atlas, that the head enjoys such freedom and celerity of action, which could only be obtained by a ball and socket joint, but the ordinary ball and socket joints are too prone to dislocations by even moderate twists to be reliable enough when the life of the individual depends on the perfection of the articulation, hence the importance of this arrangement of joints combining mobility with strength and security."

Axis lesions impair the following named muscles: The effects are, disturbance of movements of neck, spasmodic contraction or twitching, especially involvement of the finer movements of the head, torticollis, and secondary lesions. The longus colli has to do with flexion, rotation and lateral flexion of the neck. The vertebral portion is attached anteriorly to the lateral part of the body of the axis and is the principal part directly involved by axis lesions. When impaired, there is difficulty in flexion of neck, or else the neck is held in position of partial flexion, the patient not being able to look directly upward.

The inferior oblique has its origin in the side of the spine of the axis and is inserted in the tip of the transverse process of the atlas. If irritated it approximates the origin and insertion; that is, the atlas is tilted or the transverse process is twisted backward. The head with the atlas is drawn to one side and backward.

The rectus capitus posticus major has to do with extension of the head and is involved in the various tics and choreas. In disturbances of the finer movements of the head this muscle is usually at fault.

The semispinalis has to do with extension, lateral flexion and rotation to the opposite side. This muscle is also involved in most of the motor disturbances of the head and neck.

The interspinalis extend the neck and have to do, when irritated, with approximation of the vertebrae. The cervical portion of the *multifidus spinae* muscle arises from the articular processes of the fourth to the seventh cervical vertebrae, and is inserted into the spines of the vertebrae above. It has to do with extension, lateral flexion and rotation to opposite side. Curvatures of the spine in general, come in part, from atrophy of this muscle.

The splenius is important on account of the part it plays in many cases of torticollis, especially recent cases. McClellan says:

> The action of the splenii aids that of the sterno-mastoid muscles. When the two muscles on both sides contract together, they assist in holding the head erect. The action of either of them is to draw the head and the upper

cervical vertebrae toward its own side. When this contraction is permanent it may produce wry neck and may be confounded with the action of the opposite sterno-mastoid muscle, which produces the same effect.

Lesions of the axis affect the splenius, usually producing contracture of it, from which results impaired movement of the head and neck.

The interspinales, when affected and working together, produce impaction of the vertebrae; *the levator anguli scapulae,* when affected, either draws upward the scapula or extends and laterally flexes the neck; *the scalenus medius* arises from the upper surface of the first rib and is inserted in the transverse processes of the lower six cervical vertebrae. Its action is to lift the rib when the fixed point is above, or lateral flexion of the neck when the fixed point is below. Axis lesions impair its function, usually producing contracure of it. The most common effect is elevation of the posterior part of the first rib.

The sterno-mastoid has its origin in the manubrium and clavicle and is directed up and back to the mastoid process and adjacent portion of occipital bone. It flexes laterally the head and neck, rotates the face to opposite side, and when acting conjointly with its fellow, raises the manubrium and clavicle or flexes the head or neck; *the rectus capitus anticus major* has to do with slight flexion of the neck, hence this movement would be abnormal in axis lesions; *the complexus* is involved in axis lesions, thus interfering with extension and lateral flexion of the head and rotation of the face. The third cervical vertebra is the smallest of the vertebrae. The laminae are especially light, thus permitting of fracture which occurs oftenest in this vertebra. It is located farther anterior than the other cervical vertebrae, partly on which account this region is weak. McClellan says: "The weakest point, not only in the neck, but also in the entire spinal column, is between the second and third cervical vertebrae."

Curvatures in the cervical, as well as in other regions, are partly due to changes in thickness in the intervertebral discs, These discs are elastic, have blood vessels and nerves, and their function is impaired by bony lesions of the corresponding vertebrae, and as they become thinned, the foramen becomes smaller.

One of the principal muscles affected by a lesion of the third cervical is the trapezius. By contraction it draws the head back, flexes the neck toward the same side and turns the face to the opposite side. If the muscle is in a contructured state, these movements are impaired.

The fourth cervical vertebra has few if any perculiarities, it being a typical vertebra. The effect of lesion of the fourth cervical vertebra on the muscles attached to it is most frequently that of contracture. The other attachments of these muscles are drawn near the fourth or else it is drawn closer to them; that is, the cervical spinal column is drawn out of line.

In either case there would be a warping of the framework of the body. The fifth cervical is a typical vertebra. The principal muscles involved in a lesion of the fifth are as follows: The trachelo-mastoid on account of its attachment to the head, by its contraction draws the head securely against the spinal column. The serratus magnus is often disturbed by this lesion, which is followed by marked weakening of the shoulder and scapula. The deltoid, teres minor and scapular muscles may all be affected, producing an interference with the movements of the arm and weakness of the entire shoulder girdle.

The sixth cervical vertebra is subject to lesions very similar in character to lesions of the vertebra above. The muscles involved, that are important, are the cervicalis ascendens, trachelo-mastoid multifidus spinae, complexus and splenius colli.

The seventh cervical vertebra is called a transitional vertebra, in that it has characteristics of both the cervical and thoracic. Its most marked peculiarity is the

very long, non-bifurcated spinous process on which account it is called the vertebra prominenes. The movements at the articulation between the sixth and seventh cervical are very limited.

The important muscles attached to this vertebra and which would, therefore, be affected by a lesion of it are the trapezius, rhomboideus major, serratus posticus superior, splenius, multifidus spinae, levator costae, scalenus posticus and medius, complexus and trachelo-mastoid. Lesions of this vertebra are associated with almost every form of disturbance of the upper extremity.

Many disorders of the cervical region are the result of lesions lower in the spinal column. A lesion in the upper thoracic will cause contracture of the cervical muscles, which in turn interferes with movement of the head and neck.

As osteopathic mechanics we must bear in mind that the body is not only a physical mechanism, but also a vital mechanism. Structural perversions will recur in spite of our correction if the vital force is not properly directed to maintain equilibrium. The occupant of this machine, the body guard, must be instructed and held responsible for the correct carriage and care of the mechanism. Postural defects produce composite lesions, which can only be overcome by the combined effort of physician and patient.

The structural framework is like the scales or other weighing apparatus that will register the correct result every time if the fulcrums and levers are properly balanced. In the case of the scale this balance is maintained by the elasticity of the material used, but in the human mechanism the balance must be voluntarily maintained by the will, through the agency of the nervous and muscular systems.

251 W. Ninty-Second St.

EXERCISE IN CONJUNCTION WITH OSTEOPATHIC TREATMENT

(Especially as applied to—1, Flat Foot; 2, Obesity; 3, Visceroptosis.)

W. S. Nicoll, D. O.
Philadelphia, Penna.

The average osteopathic physician is prone to minimize the results that may be obtained through the prescription of exercises in conjunction with his treatment.

No matter how skillful an operator one may be he is doing less than his duty if he omits any factor that may assist nature in her efforts to establish normality. In the conditions described in this paper there is an especial necessity for intelligent exercises to restore tone to flabby muscles and stretched ligaments. Also to hold and utilize the improved character of the nerve impulse that has resulted from our specific manual adjustment. A mere verbal description of the exercise is not sufficient. The physician should carefully demonstrate the movement and the patient should be able to do it correctly before he leaves the office. Then each time the patient is seen, he should be requested to exemplify each movement until a reasonable degree of accuracy and efficiency is developed. If you have attempted to teach middle aged and elderly patients some of the simplest exercises you will appreciate the necessity for these precautions. Needless to say, it behooves the physician himself to be familiar with the proper method of performing the movements and to be conversant with the mechanics involved and the application to the particular case. This knowledge may be easily gained by active work in the gymnasium and a study of the text-books on the subject.

In presenting these various conditions and the exercises applicable to each, the time allotted to me will only permit of a hurried description of the anatomical

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and pathological phases of the subject. Some review of the anatomy of the special structures will be necessary to show the reason why certain exercises will produce the result claimed for them.

FLAT FOOT

The first condition we will take up is that of flat foot or pronation. This deformity is important not only on account of its local effects but because of its more remote effects upon the whole lower limb, pelvis and spine.

The etiology of the condition is rather involved. Heredity plays an important part and family and racial predisposition are very evident. The negro is proverbially and hopelessly flat footed and the Jew usually shows more or less of a tendency that way. Keetly calls attention to the fact, however, that the London Jews have fairly high arched feet. The German foot is usually of the long narrow type with the low instep, while the British foot is more apt to be of the short, broad and high arched variety. In this country where we encounter such an admixture of races this distinction is not so marked. From my own observations of a great number of cases of flat foot I have not found that the long foot with the low instep was any more prone to acquire flat foot than that with the short high arch.

Flat foot may be divided into the congenital and acquired types. The congenital type or *Pes Planus* is not frequent and is so different from the condition of acquired flat foot encountered so frequently that I will not devote any of our time to it. If it is not severe enough to demand surgical treatment, the same exercises are indicated that I will describe in connection with the acquired type.

Acquired flat foot is found principally in individuals who are obliged to stand on their feet for long periods. Policemen, barbers, nurses and dentists are prone to suffer from it. Osteopaths will also come in for their share of cases unless measures are taken to offset it. Policemen seem to be especially liable: they, of course, furnish the two great factors for its production—namely, increase in weight and long periods of standing. Walking even when carried to excess does not cause flat foot; in fact, frequent walks with the springing or "walking on the toes" accentuated is one of the greatest preventive and curative measures that we have.

The tendency toward flat foot is one of the penalties imposed upon humanity as a result of assuming the erect position. This probably accounts for its prevalence in those races lower down in the scale of evolutionary progress.

A brief resume of the anatomy of the arch and its associated structures would not be amiss at this point. We find the foot has two arches, one antero-posterior, the other lateral. The lateral arch is incomplete, inasmuch as its internal border is unsupported.

The anterior-posterior arch is made up from before backward of the metatarsals, cuneiform, navicular, astragulus and os calcis. The anterior end of the span being the distal extremity of the metatarsal, the os calcis being the posterior support, and the astragalus, the keystone. The lateral arch is supported externally by the os calcis, cuboid and fifth metatarsal. Internally it has no support inasmuch as its internal margin consisting of the astragalus, navicular and proximal extremity of the first metatarsal do not rest upon the ground. The ligaments involved are the long and short plantar ligaments and the inferior and superior calcaneo-navicular ligaments. These ligaments extend from the os calcis to the navicular, cuboid and metatarsal, thereby assisting in the formation of the support of the astragalus. In addition to the ligaments mentioned, the integrity of the arches is augmented by the action of the flexor brevis digitorum, flexor brevis hallucis, flexor longus hallucis, flexor longus digitorum and tibialis anticus. MacKenzie calls attention to the fact that the tibialis anticus also helps by lifting the proximal end of the first metatarsal bone. The com-

bined action of the muscles is to increase and maintain the convexity of the arches. Hence the accentuation of the movements of these muscles as in practicing the military walk has a tendency to strengthen the arch.

The etiology of flat foot then would be any factor which would destroy or affect the relations between the bones, ligaments and muscles mentioned. Rickets is ascribed by many as a cause. The European authorities in fact regard the disease as a rachitic process. Rheumatism is probably a predisposing cause in a larger number of cases than we suspect, and conversely a number of so-called cases of rheumatism are in reality flat foot. The exciting cause is usually long continued standing, especially when accompanied by increase in weight. Neurasthenia and cachexias may also operate to produce a poorly nourished and relaxed condition of the muscles and ligaments of the foot. Some of the older text

Exercise No. 3

Exercise No. 4
Military Walk Accentuated

Exercise No. 1
Stationary Walking.

Exercise No. 2

books thought that the disease was frequently due to a paralysis of the peroneus longus. The trend of the modern investigator seems to be away from this opinion, however.

From this description of the condition we can readily see that exercise to be of benefit must bring into play the muscles that assist in supporting the arch. They must improve the circulation to the ligaments and bones involved and must teach the patient to use his feet in such a way as to prevent a recurrence of the condition. I make the latter statement because a fair proportion of the cases are undoubtedly caused by improper walking and standing. Normally when both feet point directly forward, or nearly so, the body weight is distributed to all parts of the arch. When the feet are pointed out, however, the weight is thrown more on the inner aspect of the foot where the arch is incomplete. One of the popular shoes for the correction of flat foot makes

use of this principle by having the inner edge concave and the outer convex. This tends to make a patient "toe in" or to walk "parrot-toed," as it is called.

Any of the exercises, then, which cause the patient to rise up on the toes and to walk on the toes are desirable in this condition. Dancing-steps of all sorts are excellent. In fact some cures are reported as a result of the patient taking up dancing. The patient should be instructed to cultivate the military walk. That is, one should rise on the toes and make a perceptible spring with each step. This will be tiring at first and may temporarily increase the ache that is present in most of these cases, but it eventually strengthens the muscles and nerve impulse. The specific exercises for flat foot that I have chosen to explain and have demonstrated are five in number and furnish a complete system of exercises for this condition. They are:

(1.) *Stationary Walking.*—The patient stands with the feet together and rises first on the right toe and left heel and then on the left toe and right heel. These alternate movements are repeated about ten times. This exercise not only strengthens the muscles but enables the patient to get a good nervous control over the pedal movements. These patients have in a sense forgotten how to use their feet, and this is a good educational exercise;

(2.) Toes in, heels out, rise up on the toes; repeated about ten times. This has the effect of strengthening the muscles, increasing the concavity of the arch and counteracting the patient's tendency to toe out;

(3.) Walking on the outer edge of the foot. This takes the weight off the weakened arch and tends mechanically to assist in correcting the deformity. Patients having weak arches instinctively assume this position to relieve the pain and tired feeling in the foot;

(4.) The patient holds the foot out in front of him and repeatedly tries to make the toes meet the heel or "to make a fist" with his feet, as it were. In other words one makes an effort to develop the prehensile power of the feet that our ancestors once possessed. Efforts at picking up marbles and other objects with the feet come under this same heading. The effect of this exercise on the integrity of the arch needs no explanation;

(5.) Crossing the legs with the feet parallel and the external border touching, the patient raises himself up on the toes ten times then stands on the outer side of first the right and then the left foot. This may also be kept up about ten times.

(To be continued in the next issue.)

Mint Arcade.

PUBLICITY

A. L. Evans, D. O.
Miami, Fla.

Whether or not the "fathers" who framed the constitution adopted at Kirksville in 1901 "builded wiser than they knew," time and events have unmistakably demonstrated that they builded wisely.

This constitution provided for the appointment of three standing committees, to be known as committees on *Education, Legislation* and *Publication.* These three subjects, in the fullness of their meaning, constitute a trinity of interests around which all our battles have been fought and under which all our victories may be recorded.

Under the head of education, the profession through its organization and its agencies, has, it may be said in brief, achieved an elevation of standards, lengthened courses of study in our colleges, and the Research Institute is almost here. It has laid down rules of ethics for the government of the conduct of the members of the profession in their relations to each other and to the public. While the work of the committee in regard to popular literature has been suggestive and admonitory only, there is no doubt that its moral influence has been felt in a beneficient way in this branch of our activities.

Under legislation we may class the unremitting and usually successful efforts to secure independent recognition of osteopathy, the fighting of bills adverse to our school of practice and the resistance in courts of law of unjust charges brought against osteopathic physicians for practicing their profession.

The Publication Committee, even should we leave out of the account the arduous labors of preparing the programs of the annual meetings, has justified the wisdom of its creation in giving us the A. O. A. Journal. This Journal has undoubtedly done much to weld the profession into a coherent mass by providing a forum for the discussion of our scientific and professional problems and a vehicle by means of which to convey the policies, purposes, news, and scientific achievements of the profession to its individual members.

In what I have written I would not be understood as meaning that no good work was done by our national organization prior to its practical re-organization in 1901, for the contrary is true; but it was then that its work was systematized for more effective service. Had the A. O. A. not done the work which falls under the heads of Education, Legislation, Publication—and done it well—had these matters been left to the differing views of a heterogeneous mass of unorganized, short-term practitioners, without proper laws, with no clearly defined ethical standards, without much real literature and without a periodical publication under their own exclusive management, these problems would not have been properly met and solved, and nothing but the indestructible truth of osteopathy could have kept it alive. We assuredly would not now have anything like the virile, coherent, self-respecting and really admirable profession that we have today.

I have not recalled the foregoing matters of history to extol the virtues of those who constituted the committees through whom the purposes of the profession were, in large measure, crystalized and presented in concrete form. These individuals simply did their duty. They were merely the instruments that formulated the will of an organized profession and through which that will was proclaimed. The great point is that we stand where we do today by reason of the power of *efficient organization.*

We have gone thus far successfully on our journey, but we have not reached our goal. As is natural, our very success has aroused fierce antagonism. The necessity for vigilance, even active warfare, is greater today than ever. I trust no one of us deceives himself with the flattering unction that osteopathy has arrived—in the sense that our battles are won. We are confronted with a wily and dangerous antagonist fully equipped for a battle to the death. In support of this statement I shall consume no space in recapitulating the evidence which must be apparent to all whose eyes are open.

How shall we meet the situation?

I answer under the same leadership that has brought us thus far on the way. By the power of organization and an effective educational propaganda. Even as the A. O. A. was our salvation in the early day, so may it be now. But we need to enlist a new army and use improved weapons. I sometimes think we ourselves need to be reinfused with the spirit of the early day when, as Grace MacGowan Cooke has said, "the truth was molten and white hot." If we do that we can make it contagious—can infuse the same spirit into others. We must convince ourselves and our friends that we have something worth fighting for.

The organization of the osteopathic profession, highly important and greatly to be desired as it is, will not alone suffice. Suppose, by a miracle, we could present a united profession to the forces that oppose us, we would then face an almost perfectly organized, aggressive enemy that outnumbers us by at least twenty-five to one. To compensate for

this difference in numbers and influence we must ally with us our friends among the laity. We should have a well trained army of them to stand by us in time of stress.

To accomplish this we must let them know the insidious dangers of state medicine; that we stand for a square deal, for medical freedom, for reforms in therapeutics, for thoroughly educated physicians, for deeper research into the hidden mysteries of life, for unhampered opportunity to conserve and develop what we believe to be the greatest healing system of the age.

But how shall they hear without a preacher? That "preacher," so far as the printed page is concerned, does not now exist, and the printed page is the mightiest instrumentality for reform that exists in our modern life. The school journals, the *Osteopathic Physician* and the A. O. A. JOURNAL well fulfill the functions of professional, news, and scientific publications. Our popular periodicals meet the requirements of missionary literature, and I believe that they have contributed greatly to our splendid growth and that they are yet indispensable. But they are necessarily too small to properly treat all the subjects I have mentioned and others that could be named. Besides, this is rather outside their scope.

A virgin field has been disclosed. A unique publication is demanded. This is nothing less than *an official organ to the osteopathic laity*. It should be a monthly magazine and have back of it the authority, power, moral force, intelligence, experience, combined wisdom, ethical impulse, and financial backing of the organized osteopathic profession. To have these things it must be owned and conducted by the American Osteopathic Association.

This is a propaganda not for patients for the individual osteopath, though it might help in that way, but one fundamental to the profession itself, to society at large, for its outcome will affect the public health—which has been called our greatest national asset. There is no more reason why it should be conducted as a private enterprise, why an individual should be expected to assume the responsibilities and risks that beset a publisher, than that the A. O. A. JOURNAL should be conducted by an individual. Indeed there are many reasons why it should not be privately owned. Properly to conduct such a propaganda is a delicate matter and should have the co-operation of the best minds in the profession. It is so intimately connected with the very life of the profession, so close to the vital center of osteopathy, that the profession itself should assume the task and the responsibility.

It is well enough for our popular journals to iterate and reiterate, in effect, to the uninitiated that osteopathy cures all curable ills, but we must appeal particularly to those who are already interested and somewhat informed, to those who are our friends, a constituency that can bear stronger meat than this. We want their help not only as patients but as co-workers. To win them to this fellowship we want a medium through which to acquaint them with the justice of our cause, the reasonableness of our aspirations and the scope of our ambitions. We want a medium through which we can expose the machinations of the medical trust and the baseness of patent medicine frauds. We want to appraise them of our new achievements in therapeutics; give them something in a striking way of our theories and principles, the news of legislative fights and court decisions affecting our interests. We can print real health hints and osteopathic ideas of disease prevention. We can tell about our Research Institute, its needs and deeds. We can make these matters so interesting and appealing that even if we do not ask for help we can make them want to help.

In short, we need to turn on the light, not a spasmodic flash, but a steady flood of it. We do not want a cold, dead undated pamphlet, but a vital, militant, red-blooded up-to-the-minute, periodical.

Debates as to whether or not our popular literature should bear the professional card of the sender, whether it should be dated or undated, even whether it should be sent to others than patients, do not, it seems to me, touch the heart of this publicity problem as we face it today.

It is not so much a different method of distribution as a different, distinct and *additional* type of literature that is needed. If the A. O. A. is going to produce practically the same kind of literature that is now being produced, in competition with present publishers, then I confess I fail to see the need for it. The type of literature dealing principally with the therapeutic value of osteopathy by whomsoever issued or howsoever distributed is open to the suspicion of being put out for personal and private ends. The new type proposed would bear intrinsic evidence of dealing with a public question—the question of public health—and the problems incident to its conservation. The benefits accruing to the individual osteopath from the distribution of the former type are primary, while in the latter they would be incidental. Whatever the ultra ethical may think about the propriety of distributing the former kind, they could scarcely deny the propriety, the duty, of aiding in the dissemination of the latter.

This unique publication that has been proposed should be sent, first, to our friends and patients because they are ready for it, are prepared to grasp its import and are the most likely to respond sympathetically and helpfully. Many of them would subscribe for it and the more who could be induced to do so, the better. Then it should go to the leaders of thought, to editors, writers, ministers and those in places of authority, such as members of congress, governors and members of state legislatures. The apostles of the Christian religion do not hesitate to carry their message to those who, through lack of knowlege, are indifferent to it. They do not wait until the heathen are converted, or ask for the light, before beginning their propaganda, nor should we if we have a message that is worth while.

Now, as to the means of getting and sustaining such a publication, I think it would, in time, become self-supporting, in fact become a source of revenue. I am sure it would if every osteopath could be induced to subscribe for one copy each at a dollar a year, and its field ought to be immensely wider than that. I shall say nothing of its possibilities, of what it might grow into—a magazine of large paid general circulation and sold at the newstands. But even if it should cost something, it is too tremendously important to be neglected. If we haven't the money we should get it. The things worth having are worth paying for.

There are those who fear that such a publication would meet with opposition from osteopathic publishers, or some of them. I do not say why. It is true the functions of the new and old publications might, to some extent, overlap; but in the main the new one would occupy a unique position in our profession journalism.

But even if there should be opposition, what then? If it really be a need, should the progress of the profession halt on that account?

Speaking only for myself, as a publisher, I will say I would not have my private interests stand in the way of the profession's advancement. If in meeting a real need of the profession, the publishing business should be rendered unprofitable to me, I will change my business. It is of much more consequence to the profession, to the world at large, that osteopathy should live than that I should make a living as an osteopathic publisher.

In my judgment, such a publication as I have discussed is a vital need of the profession, and we cannot set about meeting that necessity any too soon.

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Editorials

THE DUTY OF THE STATE TOWARD THE PRACTICE OF THE HEALING ART

Indications are not wanting that the state legislature is coming to be a greater factor in determining what the practice of medicine shall consist of than such a body is fitted to be. As the JOURNAL has pointed out several times, it is no business of the state to pass on the value nor investigate the reasonableness of any school of medical practice. The duty of the state is to satisfy itself that there is a demand for a certain system or school of practice, and then to determine what tests practicians of this system should be subjected to in order to guarantee to the public reasonable competency from them in treating disease, and as soon as any considerable number of a given school of practice enters a state, it is the duty of the legislature to provide for the necessary tests; for it is not just to the citizens of the state that practicians of a certain school or cult be allowed to practice twelve or fifteen years in the state, when their qualifications to treat the sick have never been tested.

It is impractical of course for a state legislature to take cognizance of every healer of whatever kind who may come into a state, but if some general board, as the Department of Education of a state, were given authority in these matters within certain limitations, and if a license or permit to practice were necessary in every case thereto, we should perhaps have justice to all, and at the same time efficiency from all as far as the peculiar methods employed are concerned.

The present tendency is to assume that the healing art is an entity and hence that all who treat the sick should take the same examination which would deal with all sciences fundamental to medical practice. All, under this assumption, should be allowed full discretion in the manner or method of treating the sick. As a specious proposition this is fine, but it is not fair to the public. There is no reason why an M. D. who has made no preparation for surgery and has had no hospital experience to make him competent should be licensed to practice operative surgery. Neither is it right for the osteopathic physician, without any training in medicine, upon passing successfully an examination in fundamentals only, to be allowed to give any drug which he may happen to have heard of and hold himself out to practice surgery. Finally, there is no reason why repre-

sentatives of any form of mental healing who have no familiarity with infectious and communicable diseases and have no knowledge whatever of their nature and perhaps deny their existence as such, should come in contact with them unless required to report them, and how can they report them if they do not recognize them?

For years to come there can be no such thing as a one-school of medical practice and the efforts to make it such by law will defeat rather than hasten these ends. We cannot make people think along any one line by statute. Nor can we make them accept any system by calling it "state medicine." Irregular practice has been under the ban in Germany for a number of years and in spite of the most arbitrary methods, such as the state refusing to allow any of these to maintain institutions for teaching, those who believe in the unorthodox systems and depend upon them grow in numbers rapidly. A one-school practice will never come about until all of these schools and cults have been tried out and their value established, if such exists. Persecution breeds determination in those persecuted and raises up friends from thousands who were formely indifferent on-lookers. It was so with the persecutions against osteopathy in the earlier days and it will be so with any whom others or we ourselves may persecute in the future. The public naturally, and perhaps rightly, thinks that if a system is worthless, why the activity against it? The fact that it is recognized and persecuted by established practice indicates to the public that there is a motive on the part of the established practice to eliminate it. The only way any system can be killed is to allow it to kill itself. If let alone and it has no merit, it will die; but while it is proving itself, the public should be reasonably protected and it is a means of providing this feature that this article is written. The A. M. A. and the heads of its colleges might as well understand early as late that uniformity in thought and practice cannot be enforced. This must come about as a voluntary recognition of the situation. These are broad principles which we believe to be true, entirely regardless of their relation to our school of practice.

Dr. Draper, Commissioner of Education for the state of New York, (see Journal, March, 1912, page 1000), has already taken the advanced ground that the state should make different educational requirements and different tests of experience for those who practice the healing art according to different methods, or practice different phases of the art, and states therein, which is perfectly true, that the rights and privileges of practice should be in proportion to the educational requirements. Now, if this principle were worked out and the administration and regulation of the entire field of the healing art be put under the Department of Education or a Board of Regents and not the whole of it put under the political doctors of one school or a board which they dominate, we should have elasticity, justice, and opportunity to give the people the system which they may wish, and give the public an assurance that those practicing a system are qualified according to the tenets of that system; further, this would give every system the full opportunity to develop itself and show whether or not it has the right to exist.

This would bring about a practical course of instruction arranged for the needs of those who practice it. It would bring about a practical examination test by the state and a guarantee of competency as far as the particular practice extends, and this, as pointed out above, is the duty of the state, and it would con-

template a license or permit to practice the particular system. Those who practice medicine and surgery must study and be examined in medicine and surgery. Those who practice osteopathy must study and be examined in all the branches relating thereto; but safe-guarding public health would seem to demand that all who use occult methods of whatever kind should be required to pass thorough examination in diagnosis of disease and sanitation and public health. The control of contagious diseases, with which they come in contact, demands that all who treat the sick be able to recognize disease and be held guilty of a misdemeanor for failure to report the same. There should be no exemption whatever from this rule.

We shall never get the best results or have anything but wrangling with one school of medicine given all the recognition by the state and all others placed under its domination and regulation. There is no other explanation of the deplorable condition that exists in many states; for instance, in New Jersey where for fifteen years osteopaths have practiced and for years perhaps 200 of them have treated the public, which has not an iota of evidence from the state that any one of them is capable. The osteopath wants to be regulated by the legislature; but the allopathic machine of the state practically says to each session of the legislature, turn the osteopath over to us to regulate — the osteopath has been strong enough to prevent this, but not strong enough to secure regulation under is own board.

Unquestionably, the American Medical Association has in mind to strengthen further its hold upon the situation and in this it appears to have the co-operation of a few of the leading medical colleges and universities having medical departments. This union is natural enough, for the purpose is to eliminate at least one hundred of the medical colleges in this country. No doubt there are a great many medical colleges which are such in name only and give a mere caricature of a course of study and take in as students, and turn out as graduates, many who can never become competent physicians. With its effort to rid the profession of this blot and the public of this menace we have much sympathy. But is there no direct and just manner of accomplishing this?

Cannot the Educational Department of the several states secure from the legislature the repeal of the charters of such medical institutions as do not meet the reasonable requirements of the department of education? If this regulation were put into the hands of an impartial body, such as the Department of Education of the state, we could all have more confidence in its real purpose to advance educational requirements and all schools and their friends and the public could get behind the movement and make a success of it. However, the indications are this winter that several legislatures will be appealed to to raise the restrictions for the practice in the state where it is practically prohibitive. This indirect method hardly seems fair. Students will continue to enter these poor schools where they get inferior instruction; but they will practice somewhere, for it will be many years before many of the states will make the restrictions asked for and the poor schools will continue to appeal to those who want an easier course and it will be an indefinite time before they will be starved out.

Now, if the Department of Education of the state were given authority to inspect and investigate the medical colleges, as to teaching force, laboratory facilities for teaching and actual teaching done, and petition the legislature to repeal charters of such schools as could or

would not, after reasonable notice, come up to the required standard, we should be putting the matter on an open, square basis and it would get at the root—the poor school—rather than getting after the innocent and deluded graduate after he has gone through it.

By this method justice could be done all the several schools of practice. With the many cults springing up and the changes taking place in medical practice, the State Department of Education or some other non-medical and non-sectarian body has got to be given charge of these matters of education and practice. It is not necessary that all schools should have the same course; but each school must have its essentials well taught and then there must be a practical examination and a license or permit to practice only what the examination covers. The proposition is for a few state universities having medical departments to take the lead and require an A. B. degree from its university before entrance into its medical department, where from four t six years must be spent to gain the M. D. degree, and then it is proposed to say to the legislature your state university has set this as a standard for the practice of medicine, recognize the advanced stand of your state university by making this the standard of entrance requirement in the state. But how is this action going to reduce the number of "irregulars" swarming into all the states? They are not affected by raising the course of study, and just as soon as one cult is ruled against as being the practice of medicine as contemplated by the medical practice act of the state, they show up under a system of some other name which has not been ruled against, and the efforts to raise the college course under existing conditions will greatly multiply this class. The plan has been in states not regulating the practice of osteopathy for them to come in as osteopaths; but in states where osteopathy is organized by the statute, they take some other name.

The physicians are already forming business oragnizations with the avowed purpose of cutting down competition and increasing the fees. The plan is by promising increased fees to secure the co-operation of the profession in urging the states to adopt these high standards just mentioned as a condition to practice in the state. They are showing one another that the income of the physician is not commensurate with his deserts and yet the raising of fees and the raising of entrance requirements to the medical colleges and lengthening their course of study is multiplying rapidly the number of those who will offer under one form or another to treat the sick. Those cults which have no schools will be the ones to profit by the cutting off of the great numbers who would become physicians, for they will take up some other form if the orthodox schools get out of their reach. A three weeks or a six months course in chiropractic or less or even none as a mental healer or some other form gives them freedom under existing conditions to practice almost anywhere.

At the present time, when the osteopathic course is practically equal to the medical course, perhaps many who wish to practice some recognized form of the healing art see that the osteopathic schools do not offer a short cut and having no particular conviction as to the philosophy of any school, they go into the medical colleges, for since the same amount of time and money must be spent in either system they will go into that which they think offers them recognition and the widest field for practice. (Ten or twelve years ago most of those who took up osteopathy were convinced of it before they entered the college. To the

same extent this is now no longer true. Many enter it as they would enter any other profession and they must be convinced of its philosophy after they enter the osteopathic college.) On the other hand, the raising of the osteopathic entrance requirements and extension of the course of study undoubtedly throws hundreds each year into chiropractic schools who are looking for a short cut, who are not qualified to enter the college and have not the means to carry them while pursuing the necessary course; and under existing conditions, the higher those which give an adeqate course for preparing men and women for medicine or osteopathy, the greater will be the number of those who are practicing these irregular systems and doubtful methods.

There is just one remedy that we can see which is the recognition by the state of the fact that more than one well defined and well developed system of treating the sick exists, and that there is a demand on the part of the people for more than one such system. That being recognized, the plain duty of the state is to put all of this general regulation, both as to the course of study necessary and the proper entrance test, into the hands of a Department of Education with a board or committee of each school of practice under the general direction of this department to test and regulate and advise with it regarding the requirements of its particular school or cult. They should require that every one who holds himself out to treat the sick shall have a license or permit to do so and must appear before the committee or board of his system and take a fair examination to test his efficiency in his particular form of practice.

If this is done, the public may employ or not employ any of these several cults; but if it does employ them, it may be assured of having those who are proficient in that particular line and those who recognize diseases and can be held responsible for spreading them.

So far as the practice of osteopathy is concerned and is related to the present tendencies in medicine and state regulation, it will be up against one of two propositions: Either to fall in as a part of the regular medical practice and compel its school to meet what would be to them unreasonable requirements that are going to be put upon the medical colleges, or to take the stand that it is not the same practice as represented by the allopathic school, that its differences are fundamental and essential, and that hence the regulation and requirements made for that school of practice should not apply to this. In the mean while, if some practical solution along the lines suggested in the leading part of this article can be started in some of the states, the entering wedge will have been set, which will in time bring justice to all and give the citizens of the state what they may want.

CHIROPRACTIC—AN ANALOGY AND A DIFFERENCE

One further demand for some non-medical board, such as was suggested above, grows out of the fact that the initiative in prosecution under the medical practice act in some states is absolutely vested in the medical society and in all states it is more or less placed in the hands of this partisan body. The result is, if this body wishes to prosecute a certain class or school of practice, it does so: if it does not wish to do so, regardless of infringement of law, no prosecution can be instituted. Osteopathic physicians the country over will recognize this as a fact. If the medical society wishes to confuse the public as

to what osteopathy is, it cannot be induced to make any distinction between osteopaths who have had an adequate course of study and representatives of all kinds of non-drug systems who have had no course at all.

Besides, even if one school could impartially administer medical practice acts in which many other schools or systems are involved, they could not get the sentiment of the community back of them in instituting prosecutions, for it would appear to be spite work on their part. The idea of placing the administration of the medical practice act in the hands of the medical society is perhaps a copy of the act regulating the practice of law, but there is this vital difference: only one Bar Association exists in the state and the practice of the law is without rival schools. Hence, the Bar Association can without prejudice or favor endeavor to preserve its good name with the public.

A discussion of this is suggested by the fact that the prosecution of chiropractors is to the front in many states. Our relation to the prosecution of these people is determined by deciding one question—the relation of the practice of chiropractic to the practice of osteopathy. If chiropractic is in no sense the practice of osteopathy, then we as a school of practice and as individuals have nothing to do with prosecuting its representatives. If it is an infringement on osteopathy, if the idea and concept is borrowed from osteopathy and if its practical differences from osteopathy are its short-comings, then it is our duty to ourselves and to the public which has come to look to osteopathy to defend our friends and ourselves from this pseudo practice.

A study of the system seems to indicate clearly that it is a copy of osteopathy. Those who have had treatment and heard lectures at the "fountain head" so affirm. Their "literature" unmistakably indicates it and those in authority in the cult undoubtedly wish it to appear just as close to osteopathy as they dare make it do and still be able to say when the law gets after them, "It is a separate system and not covered by the act."

We should get this situation very clearly in our minds. It makes no difference how much the practice of chiropractic may cut into the practice of osteopathy; it makes no difference how many of these practitioners may come into the state and how many people may flock to their offices in response to spread-eagle advertising and attractive prices, we have nothing to do with opposing it unless it be a cheap and inferior grade of osteopathy; and even if it be this, perhaps we have nothing to do with it except to demand that those who practice it take a course of study equal to that demanded of ourselves.

We have schools distributed over the country which give a three or four year course in osteopathy. We have laws in almost half of the states which set up a Board for determining the qualifications of those who practice osteopathy within the state. The incongruity, then, of thus providing for a well equipped school of practice and then permit the existence of schools teaching a fractional part of the same thing, so far as they go and are able to do in ten lectures or six weeks attendance and remarkably only for their utter ignorance and disregard of well established facts and for what they omit to teach and the crudeness of the application of this principle must appeal to all as one which calls for a Department of Education, rather than a Department of Medicine in the state to regulate these matters.

Yet, the followers of any system will thrive on opposition and persecution from

others engaged in similar work. It is the life of it. It keeps the system and its representatives to the front and for this reason, as well as for the higher reason that we wish to be absolutely right, we must make our position in the matter very clear.

The regular school of medicine, which at the time of the advent of osteopathy relied almost entirely upon the administration of drugs as its treatment, at once took up the fight against the practice of osteopathy as a violation of the medical practice act. There were two features of the practice which they did not like: First, a new school which apparently appealed to the public; and, second, they were not willing to admit at that time that other than chemical means were effective. The idea of the physical relationship as a part in the causation and cure of disease was too big a step to be accepted when its source was outside the orthodox profession. Hence, osteopathy from that day to this has been more or less persecuted. It assumed that the conception was without sense and the application without effect.

It could not, of course, maintain that the conception of it was gained from medical sources or that the practice of it was in any sense an infringement upon their methods. The difference between the two was clear cut and distinct in the public mind. If the public wanted drug medication, it went to the drug doctor. It it had tired of this and believed there might be some truth in the new way which emphasized the minute adjustment of the body structures and environment as a means of restoring function and co-ordination, if not indeed a restoration of degenerative changes, it sought this new school.

Since the advent of osteopathy, either suggested by it or at least encouraged by it, and the remarkable sanitoria results, both in this country and abroad from the use of the so-called physiological methods, this general idea has grown apace until now we find almost innumerable cults denying the necessity of drugs, and depending upon mental or manual adjustment, thermal or some other form of stimulation as helping the individual to feel better, if not indeed aiding him to regain his health.

We should have nothing but encouragement for any system that is doing humanity good unless it is doing it a corresponding amount of harm; but we have a right to interest ourselves individually in creating a public sentiment in favor of requiring all who hold themselves out to treat the sick to be licensed to do so by the state and to aid in bringing about some just and adequate state regulation to make this practical. If chiropractic is osteopathy within limitations which exist mainly to evade the law, then we have the right to say that they must come up to the same standard that we have come up to—they must require an actual attendance in person of not less than three years in competent schools teaching all the fundamentals to medical practice. If they do this, we as a school of practice have nothing to do with the name under which they sail or the prices which they charge for their work.

Perhaps no one will deny that osteopathy was the first system to establish as its basic principle the importance of structural adjustment and it would seem to make no difference as far as erecting a separate school is concerned as to whether the disturbed articulation is encouraged back through the principle of exaggeration to loosen it and reduce it by taking the articulation through the movements it was intended to make, or crudely knocking the articulation in place

with one's fist. Methods of applying the principle would not seem to create a distinct and different school of practice any more than a failure to recognize the necessity of sanitation, of hygiene, of diet, would make a system distinct from that which did recognize them.

The practice of drug medication consists of the use of approved remedies, carefully and skillfully prepared, plus the use of any and every other principle or application which the physician may feel meets the requirements of his case. Suppose one ignores all of this and takes castor oil and the cold tar derivatives and gives them to every subject who comes up without knowing anything of the action of either; or never having studied diagnosis, suppose he brews a concoction of "roots and herbs," would he be allowed to practice and would that make of him and others whom he might attract to him a separate and distinct school of practice, simply because he cut out sensible helpful measures? To take a part of a thing and distort it to suit it to one's purposes hardly makes of it an entity on a par with the whole.

The practical objection of the medical societies to the practice of osteopathy is the fact that people seem to believe in it for the reason given by the physician in Kirksville twenty years ago to the late Dr. William Smith, who made inquiries concerning the new doctor (now the Old Doctor), "He cures them." But as between osteopathy and chiropractic, the steal is so apparent as far as it goes, that it would appear that we are justified in demanding that the courts require these people to measure up to the same requirements that the state laws compel us to take.

THE KIRKSVILLE MEETING

It will be recalled that the Association was re-organized and the scope of its activity clearly defined at the Kirksville meeting in 1901. Seven years later, it went back to celebrate with Dr. Still his 80th birthday. A splendid meeting was held, marked by a record attendance and an appropriate celebration was held, which we believe gave Dr. Still some idea of the respect, appreciation and veneration which all real osteopathic physicians feel for him.

On Augst 6th, next, if he lives, Dr. Still will pass his 85th mile-stone and he made the request of his "boys and girls," as he calls them, that they be with him on that occasion. It is known to the entire profession that the meeting is to be held with him and as that held on his 80th anniversary was a record attendance and accomplishment, so it is believed the coming meeting to be held on his 85th birthday will go equally far ahead of all heretofore held.

The facilities for holding a meeting full of practical demonstrations which the large school and hospital offer would be hard to find elsewhere, and taking advantage of this, the clinics will be the strong feature of the program. It has been suggested that special clinics be held at the time of this meeting, a regular course running over several days. A committee has been working out the scheme and ascertaining whether or not it is practical for the past six months and the Executive Committee will definitely determine this at its mid-year meeting to be held before this is in the hands of most of our readers. The program proper is well under way. The citizens of Kirksville are taking the keenest interest in the special features of the celebration in which

they will have a part, and Dr. Still is looking forward with the greatest anticipations to this gathering in his honor.

Already, arrangements are being made for the best possible railroad rates, and Kirksville now has become a city of such proportions as to amply care for 2,000 or more guests. Located in the midst of the osteopathic field, the center from which osteopathy has radiated in very direction, all roads should lead back to it for the first week in August next, and every one who can possibly to do should be a part of that 17th annual meeting of our national organization. The program, the committees and definite railroad announcements will be printed in an early issue of the JOURNAL.

PRIZE ESSAY CONTEST

There remain about four months within which articles intended to compete in this contest must be submitted. Dr. Roberta Wimer Ford, for the Publication Committee, printed in the November issue of the JOURNAL, page 171, the conditions of this contest. The cash prize is $50, with a part of which the Association buys an appropriate medal and the remainder is paid to the winner in cash.

In the past, a number of the best known members of the association have competed, several of whom have been awarded the prize. In recent contests eight or ten essays have on the average been submitted. The number should be doubled. The cash value is worth the effort. The study incident to preparing the article is worth the effort. The contribution, singly and combined, to osteopathic literature is worth the effort. Let us have fifteen or twenty articles submitted in the 1912-13 contest.

THE DIRECTORY

The secretary's office receives many inquiries about the Directory. It was at first proposed to issue it earlier in the fall; but so much activity was aroused in the membership department that in justice to the applications received, it was thought best by the Board to defer the publication until the first of the year. This will be the Membership Directory of the A. O. A. for the year 1912-13. The main part of the Directory will contain only the names of the members in good standing, to July 1, 1913. A supplement will be issued, uniform in size with the Directory of Membership, but bound as a separate pamphlet, and a copy of each will be mailed to each member. Unless the work is delayed unnecessarily by the printer, it should be mailed before February 1st.

PUBLICITY

We wish to direct particular attention to the article just preceding the editorial pages by Dr. A. L. Evans. Dr. Evans, by training and temperament, is well qualified to speak authoritatively on this question. As is perhaps generally known, the JOURNAL was founded under his management and after seven or eight years' work with it he resigned as editor to give his attention to the development of popular literature; so that with ample experience in both scientific and popular professional journalism, his thoughts as expressed in this article are entitled to careful consideration.

This, in a measure, is a follow-up article of that contained in the December number of the JOURNAL, and makes more specific some of the general suggestions contained therein. This is a subject in which the profession is keenly interested and we believe that there will be a re-

sponse to the request of the Board of Trustees for a free but concise discussion and expression of opinion from the membership regarding the same.

OUR ADVERTISERS

The Journal "points with pride" to the character of the advertising it is now receiving. It must be a satisfaction to the profession to witness the recognition of the profession by the great publishers and other commercial concerns dealing in physicians' supplies as a field for activity, and we all no doubt get much satisfaction out of the recognition of their official organ as evidenced by these advertisements.

This has come about by the activity of the profession in reminding these business houses of the field which the Journal offers them. The Journal wishes herewith to express its appreciation of these efforts and to call attention to the fact that now that we have secured these advertisers, we must support them. They are entitled to preference, and all things being equal, they should receive the patronage we have to bestow. If we make this advertising profitable, as we can easily do by following this suggestion, the profession will become recognized within a very short time as one of the leading schools in the healing art, if indeed it is not already so recognized. We expect to present other new advertisers within the next few issues.

SHORT NEWSPAPER ARTICLES

In many parts of the country particularly in the smaller towns, the local papers would gladly print short newsy articles regarding the practice of osteopathy or some phase of the school of practice, if matter were presented them written in an attractive, newsy style. The Association is trying to meet this need. It has on hand, at the present time, perhaps a dozen such articles and hopes to double this number within a short time. These articles are re-prints from osteopathic publications and should be inserted in the newspapers publishing them as such.

We do not wish to send these out to our members who would not wish to use them, but we will gladly send them free of all charges to those who will make an effort to have them printed. We would suggest, therefore, that all who are interested in this practical means of publicity, send us their names and speak to their friends who are not members of the Association, but to whom we will extend this courtesy. If we know you want and will make an effort to use these articles, we will not only send you what we have on hand but others from time to time as we secure them.

These articles will deal with osteopathy only, and will be entirely impersonal and the name of no osteopathic physician should be used in connection with them.

Departments

TECHNIQUE

Carl P. McConnell, D. O.
Chicago

There is no royal road to technique. Thorough diagnosis, study, observation, experience, and a certain mechanical ingenuity are the factors necessary for the requisite skill to meet conditions. Individuality, as based upon the patient's variations as to symptoms, pathology, age and temperament, should be thoroughly realized by the osteopathic physician. Both fortunately and unfortunately, a certain amount of technique is routinism. Fortunately after we develop a certain skill based upon nervous co-ordination and conscious and unconscious development of the sense of touch we almost involuntarily or routinly accomplish a certain amount of valuable treatment. Unfortunately this "automatic skill" is too frequently abused by substituting it for other treatment indications, based upon individual indications and requirements or else laziness or inability in diagnosis predominates. Indeed, this is often, far too often, the scapegoat of osteopathy. It is the line of least resistance; for inertia here is deadly sin in so far as real progress and ability is concerned. No wonder that the manipulations of certain "osteopaths" do not even approach the execution of the osteopathic concept, disgust the patient, and give the osteopathic school a set-back that is hard to combat.

Rubbing, vibration, etc., no doubt have certain merit, but for the good name of the individual and of the science, it should be thoroughly explained to the patient that such methods are not even in the same class as the infinitely more efficacious work of adjustment. The latter must be kept inviolable—distinct and characteristic—if the operator ever expects to have any osteopathic self respect whatever. This is a criticism, not so much on the use of extraneous methods (for they have value), but instead on their indiscriminate or universal employment, either at the expense of osteopathy or the misinformation of the patient. Still all of us know that the successful osteopathic physician is he who sticks close to his text and does not dabble to any great extent in minor issues; indeed, he has neither the time nor the inclination to do so, knowing full well that they are largely will 'o the wisps, in so far as any special additional value is concerned.

The basis of a successful technique consists of first a detailed knowledge of structure, functions and the various possible disorders; second, an understanding of the physics of simple mechanics. Then a little originality and imagination will easily accomplish an indicated procedure. Too much imitativeness cannot but result in mediocre ability.

A good technicist always works with a definite purpose in view. The real secret of osteopathy's success has been its common sense viewpoint, its plausibility, its scientific foundation, and beyond all the results that have followed when its tenets were faithfully observed. Indefiniteness of treatment simply dissipates efforts and forces; it is the narcotic that paralyzes satisfaction and progress.

Wrong habits in practice as well as fearthought will keep one in mental bondage. Much has been said and written about the comparative merits of specific and general treatment, and as usual in such discussions there is probably more or less confusion of premises to begin with. In the first place it is difficult to conceive how any one could doubt that certain specific results is teh one great desideratum to be sought for in therapeutics. But just the method to secure these results may be open to opinion. However, if osteopathy has any one thing characteristic, it is the etiologic conception that many disorders are the direct or indirect effects of maladjustment, and a logical conclusion would be, based upon this premise, that adjustment in the most expeditious and effective manner would be the thing desired. If Dr. Still has taught and practiced any one thing above others in therapy it certainly has been specific adjustment—and adjustment that is immediate and effective, and absolutely based upon the anatomical and physiological indications. No one has ever seen him guilty of "engine wiping" as he used to so frequently call general treatments. If anything would raise his ire it would be the advocacy and practice of general pommeling.

Now we would not say there is no merit to the general treatment, for there unquestionably is; so there is merit to massage, Swedish movements and medical gymnastics. All of them have a certain place to fill, but why in the name of common sense and honesty should one call this osteopathy? However, a general treatment may be given for a specific purpose, but that is another story. But our contention in this question has always been that there is a class of individuals who rub and paw their clientele literally by the hour, and then have the nerve to dub such stuff osteopathy. If it takes an hour or more to give a treatment in certain instances, all well and good; but most assuredly every patient no matter of what ailment does not require a stated interval of time of so-called treatment any more than every patient upon the other hand should have his

neck wrung and popped. Such indiscriminate measures are absolutely misleading osteopathically, and frequently damnable therapeutically. Of course if their stunt is to amuse the patient, that again is another story.

To return to the main theme, we should not utilize a general treatment at the expense of more specific indications. Every osteopath of course in certain cases has to prepare the field, so to speak, for more specific measures, relax contractures, break up adhesions, overcome rigid areas, etc., but with it all the specific adjustive work must never be forgotten. Upon the other hand, frequently much time and suffering can be saved by going to the specific maladjustment or the key to the malalignment and immediately correcting the same; often it is surprising what this will accomplish when we have been led to think more or less "preparation" is first necessary. After all it is the detailed diagnosis that is the first essential and then our ingenuity will not be so much taxed with what to do as to how to do it. Routinism in therapy spells retrogression, in diagnosis, progression. Specific treatment in therapy is the prime authority; in diagnosis we require a "triumvirate—history-taking, physical diagnosis and laboratory findings."

The following interesting communication is from Dr. C. W. Young:

I would say that I would consider stimulation, inhibition, muscle kneading or stretching all a matter of adjustment However, I presume you mean by "adjustment," the use of the word in the narrower sense—that is the reduction of bony subluxations and dislocations. You will undoubtedly find that all osteopaths are expected to answer that adjustment is of prime importance, and I am inclined to believe that such is the truth, though scientific demonstration would be difficult. A considerable part of my routine treatment consists of "articulating" the joints usually with special reference to the joints of the spine. I believe in most cases, where there is general disorder, for example, where the trouble is not confined to a bony dislocation—a treatment should be continued from twenty-five to thirty minutes—until a profound relaxing *reaction* is secured—that is, when the patient is glad to lie very quietly on the table while every part of the body is profoundly relaxed—the breathing becomes very deep involuntarily, and the throbbing of the jugular veins become very evident. I believe one can secure the best kind of clinical results by a treatment of this kind—but with a large practice one cannot get the best financial results thereby.

Of the four items encountered, I would regard inhibition of the least merit—that is to say, the result of movements that we are taught to regard as specifically inhibiting in character. I am inclined to think, however, that much of our adjustment or muscle stretching has in many cases inhibitory effects—that is to say, diseased people have too much or too little nerve stimulation—and our treatment tends to normalize nerve activity. I think likely there is about as much over action of nervous energy, as inefficient action. Take the tense nervous person, who becomes profoundly relaxed, after you have used "adjustment," "articulation of joints" and "muscle stretching"—you have used no movement that is ordinarily called "inhibition" and yet is not the quieting effect secured an "inhibition"?

I would regard it very difficult to measure the relative merits of "adjustment" and "muscle kneading" as compared to "stimulation" or "inhibition" as I believe all "adjustment" or "muscle kneading or stretching" will in almost all instances produce "stimulation" or "inhibition." I presume, however, you have in mind the question in treatment of the osteopath who in his practice finds bony or muscular abnormalities and confines his attention to a manipulative correction of these abnormalities as compared with the osteopath who conceives he must manipulate a nerve or inhibit it to secure "stimulation" or "inhibition." I believe that adjustment and muscle kneading or stretching are of more merit than "stimulation" or "inhibition" when "stimulation" and "inhibition" have reference solely to nerve manipulation. This answer should be further modified by the statement that in certain cases under certain conditions, there is more merit to stimulation or inhibition as the case might be—that is you can get certain desirable results by stimulation or inhibition—that you cannot get by adjustment or muscle stretching.

I have been considerably surprised at the great variety of answers to the question: "What is your favorite method of adjustment of rotation between the fifth lumbar and sacrum?" A few positively assert that such a lesion is an impossibility, others are more temperate in their statement when they say that clinically such a lesion has never been noted in their practice. Then a number state it is a rare lesion; others that it is very common. Again we find several claiming that it is usually secondary to innominate lesions; others that innominate lesions are secondary to fifth lumbar twists. Certainly here is confusion in diagnosis. And so it is not surprising that we find a variety of technique that ranges from easy clear-cut methods to those that would test the flexibility of a contortionist or strain the muscles of a Hercules.

We may well question ourselves, Why all of this confusion? Either something is wrong with the methods of clinical presentation in our colleges (this is not a criticism that the teachers do not know their work) or else the practice of technique is really difficult. Now the application of simple mechanics should be one of the easiest things in practice. But we suspect that many practitioners do not resolve their therapeutic problems into its component parts. Either they do not take the time to basically solve the problems presented, or they take a hocus-pocus chance, or else osteopathy to them does not consist of any clear-cut mechanical problems.

In our opinion, lesion of the fifth lumbar is one of the most common and fundamental of lesions, and we may add it is one of the easiest to adjust. Also in our opinion rotations constitute the great majority of maladjustments at this point. There is almost certain to be a compensatory rotation at the fifth, or possibly a vertebra or two higher, with innominate lesions. Then as we have stated in a recent issue, many apparent innominate lesions will be found

to be secondary to fifth lumbar rotations. Careful diagnosis must be made before one attempts to do any treating. Probably diagnostic confusions, that is, not having any definite plan to follow or no definite conception of the problems at issue, is the cause of the expenditure of much useless effort, time and energy.

The following from Dr. J. C. McGinnis is a good description of a method that is a favorite with many:

Patient lying upon side with hips well to farther side of table, shoulder as near you as possible. With patient's knees well flexed, place the upper knee so that it will roll or slide easily over the other, grasping the arm of patient, carry it back until your forearm rests upon his shoulder, with your forearm upon his hip, with pressure forward, rotate or roll the patient until you feel that you have found the limit of tension, and have the spinal column locked down to the sacro-lumbar articulation, you exert pressure quickly and you note a separation.

Of course the patient must lie upon the opposite side to which the fifth lumbar is rotated, that is, if the fifth is to the left the patient lies upon the right side, and vice versa. These lesions refer of course to rotations between the fifth and sacrum, not a lesion of the fifth or of the sacrum. So with a number of operators when the patient is in the above position they lock the spine as the doctor states and instead of rotating the body backward on the sacrum they pull forward and downward on the sacrum rather suddenly and thus rotate the sacrum on the spine. It is certainly an easy method and if the force is localized just right very little of the thrust will accomplish the adjustment. Relaxing the muscles at first is a good procedure as well as exaggerating or relaxing the lesion just prior to the adjusting movements.

A method that is a favorite with a number is to treat the patient while he is sitting. Here are several varieties. John T. Downing, D. O.:

If patient is male, have him straddle table with back to end of same, if female, sit on table with back to me, an assistant holding knees: I reach from behind under one arm and across chest to other shoulder, then raise and rotate body, while with thumb of other hand I fix point of desired rotation.

No doubt this is an effective method and is desirable in some cases, but it is hard work and is not so universally applicable as the former one. However, no doubt much depends upon getting used to a method. This is a method where one can substitute the weight of the patient for the operator's strength if he gains the patient's co-operation and goes about the work systematically. After all, diagnosis of the lesion and analysis of the technique are the basic essentials. After that it is practice that secures expertness.

L. Ludlow Haight, D. O., has a slightly different method:

Patient sitting on table with hands clasped over neck. (Fifth back on right.) Physician's right thumb on right tranverse process, left arm reaches under patient's left elbow in front of patient's body, grasp patient over insertion of right deltoid and allow patient ward left and swing toward left with pressure on right to fall forward, holding patient's weight, rotate to-transverse process maintained until patient is drawn back and straightened up. This can be used any place in spine up to the mid-dorsal. The amount of flexion of patient depends on situation of the lesion.

This method emphasizes most vividly the necessities of localization of lesion, release of the restraining parts, maintainance by tension of advantage gained before complete adjustment, and thorough application and control of leverages. It is a thoroughly scientific method but requires considerable practice and expertness. There is some danger of its being abused in the hands of the careless or of the amateur.

J. R. McDougall, D. O., gives us the following:

Patient sitting with back toward end of table close to edge and feet upon table, operator placing left hand under patient's right axilla, arm resting across chest. Bring patient back to almost horizontal position, then bring pressure with right thumb, the thenar or hypothenar eminence upon the right transverse process of the vertebra displaced. We are supposing the vertebra rotated to the right, the spinous process to the left.

This is undoubtedly an effective and convenient method in a number of instances. Its success depends first upon the releasing or relaxing to a certain extent of the muscles and ligaments by hyperextension and second by precisely localizing a thrust. In some cases the thrust can be exerted against the spinous process, provided it is given at the right angle. In my experience this method works better with lesions of the mid- and lower dorsal regions. In these regions the patient must be tilted back considerably farther, but we will consider this region in another issue.

Here is an assortment of methods that we will run through hastily:

Patient on side, extreme flexion of legs and thighs, stand behind patient, place thumb or heel of hand on side of fifth lumbar, grasp both knees with other hand, make quick and strong rotation of legs and hips against fulcrum. [All right in theory but hard work in practice.] Another method is to have patient in the same position, stretch lumbar region, then place arm under both limbs just above ankle, hand on upper thigh of patient, the other hand holding fourth and fifth lumbar, lift up with arms under the limbs enough to lift pelvis off table, this throws the force at point of lesion. [This is also hard work and I doubt if the leverage will always be great enough.] Patient on back with knees doubled up on chest with one of my arms while my fingers are a pivot on which I rotate his lower body with attempt to keep vertebrae fixed and move other parts. As a rule most of such lesions are strongly fixed and this is good at "breaking up" of adhesions, stretching contractures, etc., as

well as for correction. [Such a method is too hard on the fingers. I find one or two methods, as follows]: Patient on face and springing up of sacrum. [There is too great a leverage here; the element of danger is always present.] Patient on chest on table. Following relaxation of the muscles which have to do with the lesion, grasping anterior superior spine of ilium and rotating lower lumbar region, with pressure against spinous process of fifth which will allow patient to relax and D. O. to work easily. I cannot get patients to relax satisfactorily on stool Another method is to strap patient to table in sitting position. Rotation and anterior extension. [Here is an easy method if executed with care]: Using swing. Exaggerate lesion. Rotate or swing patient's body, either backward or forward as the case may require, and at the same time adjust the articulation as patient comes back to upright position.

This last is given by E. M. Browne, D. O. No doubt the swing is a great help in the correction of various lesions. But of course it must be used with good judgment, for one can secure very effective leverages and the control of the patient is specially easy. Hence the danger of strain or damage. I believe if more of us used the swing work would be easier and in some instances results more quickly secured. We will mention one more method:

Place patient on stool. Operator stands facing patient—astride patient's knees. Patient drops both arms over operator's shoulders. Operator places fingers of hand toward which rotation occurs posterior on transverse process of fifth lumbar. The fingers of the other hand are placed against the spinous process of the fifth lumbar. Complete relaxation is absolutely necessary. Traction is upward with both hands, forward with transverse process, and lateral with spinous process. Slight rotation of trunk as correction is accomplished. This operation can be greatly facilitated if an assistant fixes the pelvis.

This is a method of G. W. Burns, D. O. Dr. Forbes employs a method wherein he stands (patient on stool) on the side toward which the spinous process moves with patient's arm as with Dr. Burns' method:

I then reach one hand across the front of the patient's chest and grasp the back of the scapula on the side opposite the lesion. Pass the other arm across the patient's back and grasp the anterior superior spine. In this position by making a few general rotations and then a sharp quick turn I can usually correct these lesions in two or three treatments. * * * The principle is to make the spine convex backward and away from the lesion and then to bend and turn the patient's trunk toward the lesion.

The only objection I have to these methods where the patient sits on a stool is the harder work. I thoroughly believe in work on the stool but not for correction of fifth lumbar lesions. Of course this is simply a personal preference.

In the preparation of these notes the writer is fully aware of the fragmentary and disjointed presentation. But we believe there is something of real practical value in each issue, and this method of presentation will add a certain emphasis to them. We should not bother too much about any absolute thought of another, remembering full well that probably our own souls are not entirely purged of the sins of technique, of either commission or omission. Unquestionably every one of us is now utilizing methods that should be relegated to the "lumber-room of antiquarian curiosities."

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PERSONAL HYGIENE

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XI.

The liver is both a secreting and an excreting organ, and as such is a very important organ in modifying the metabolism of the body.

Stationed as it is between the intestines and the heart, the liver acts as a means of screening out of the blood those toxic substances which are ingested in the food, and also those poisonous products of putrefaction which originate from proteid foods digesting in the intestine.

There are many toxic substances arising within the body from foods undergoing metabolic changes, preparatory to their use by the body. Carbohydrate foods undergo fermentation and decomposition, while proteid foods undergo putrefactive changes. Many of these end products of metabolism are very poisonous to the system when the normal chemical reactions are arrested before they are completed. In the metabolism of nitrogenous food such end-products as hippuric acid, urea and creatin arise and are ultimately excreted by the kidneys. In this stage they are harmless to the organism, but before some of them reach this stage of chemical composition they are very poisonous to the body. For instance, urea which is one of the innocuous substance of nitrogenous metabolism, and considered one of the best diuretics known, is in its stage preceding urea—carbonate of ammonia—a rank poison; but after carbonate of ammonia has passed through the liver and been converted into urea it becomes harmless in itself. Bunge says: "Ammonia is a poison, and one of the functions of the liver is the prevention of ammonia intoxication."

Healthy people excrete from 0.4 to 0.9 grams of ammonia in twenty-four hours where the liver is working properly. But in diseased conditions of the liver, such as, cirrhosis of the liver, where cell metabolism is impaired, the amount of ammonia, according to Bunge, may rise to 2.5 grams.

From these facts it is evident that the liver is the organ where part, at least, of urea formation is completed, and where the ammonia carbonate undergoes the final chemical reaction which robs it of its poisonous qualities.

Ammonium carbonate is not only toxic to the organism, but may become harmful in another way. In certain diseased conditions urine may become alkaline, by the conversion of urea into carbonate of ammonia, and when such a chemical reaction takes place in the bladder, phosphate of lime, and triple phosphate of magnesia are precipitated and form urinary calculi in the bladder.

Lactic acid is another product of metabolism, which arises in muscular exercise, and probably in other ways also, but is never found in normal urine. In such diseases as phosphorous-poisoning, osteomalacia, atrophy of the liver and trichinosis, Bunge says it is found in the urine. It is held by many investigators that after lactic acid is formed in the organism it is then carried to the liver where it undergoes oxidization and is used in some other form by the body. According to Lorand:

> When the liver is extirpated, a condition of acidosis arises, and a large quantity of ammonia is eliminated, which is produced in order to neutralize the acids present. The liver protects us against acids formed in the organism. After eating a quantity of meat, we would be menaced by the acids formed through its decomposition, were the liver not active.

This author points out that acidosis from meat may be prevented by eating a considerable amount of carbohydrates if the liver is healthy. He goes on to say that Naldvogel has shown, however, that if the carbohydrates are administrated in such a way as to preclude their passage through the liver; e. g., subcutaneously, that they do not prevent acidosis, showing that the liver is the great factor in neutralizing harmful acid products that arise in metabolism.

The liver is subject to the same laws of hygiene as other organs of the body, and when gastro-intestinal diseases create excessive quantities of toxins, the epithelial cells of the liver may become altered and histological changes take place in it which impairs its function. By feeding animals with lactic, butyric, and acetic acids, Boix produced hepatic cirrhosis. When these histiological changes take place in the liver, ammonia formation is increased and urea is diminished. Excessive functioning of any organ will in time impair its structure and thereby impair its function by substituting, fibrous, for functionating cells in the tissues.

Another important function of the liver is its production of bile. While bile is not altogether an excretory product, its retention in the system is detrimental. Probably the cholesterin of bile is entirely an excretory product and as such must be constantly eliminated from the system. Howell points out that cholesterin is insoluble in water or saline solutions and that it is the bile acids, glycocholic and taurocholic, that its soluble qualities are due in the bile. Cholesterin is an end product of cell metabolism, especially white matter of nerve fibres, and is not formed in the liver, although excreted by that organ. On the contrary, the bile acids are formed in the liver cells. From the fact that the bile acids are poured out into the intestine in the bile and again reabsorbed into the circulation and carried to the liver. Howell maintains that they may be useful to the organism as a cholagogue. It is said that the best cholagogue known is bile itself. It seems that nature has created an intestinal-hepatic circulation, of the bile acids at least, and that such an arrangement is more or less automatic in carrying down the cholesterin in soluble form from the liver to the intestines.

We can readily see the possibility of gall-stone formation with these bile acids decreased to the extent of allowing a precipitation of cholesterin in the gall-bladder, and we can also appreciate the opportunity our profession has to dissolve gall-stones without resorting to surgery, by producing a normal production of these acids, by normalizing liver metabolism.

Another function of the liver is the formation of glycogen. This substance is an animal starch, and is used as an energy producer. Carbohydrate foods furnish the greater amount of glycogen although proteid, and even fats are also converted into glycogen. While the liver is the great storehouse of glycogen, this substance is also found in the muscles over the body, the entire voluntary muscular system containing almost as much as the liver. Under drastic muscular exercise, or during starvation, the glycogen may disappear almost wholly from these tissues, but when food is supplied the normal glycogenic store is replenished. Glycogen is thus seen to be the great energy-producing substance of the tissues and in diseased conditions where the glycogen forming functions of the liver becomes impaired, of course the vitality of the patient runs low.

Glycogen is also a source of heat to the body.

Bunge says:

> If we lower the temperature of a rabbit by cold baths and cold air, all but minute traces of the glycogen is found to have disappeared from the liver after a few hours.
>
> Starvation deprives warm-blooded animals more rapidly of their glycogen than cold-blooded animals. * * *

It is often customary to deprive diabetic patients of carbohydrates, but if proteids and fats are converted into glycogen, in diabetic patients, such procedures would seem useless, and even harmful, if by such methods we lower, not only the energy, but also the temperature of the body.

Bunge quotes Von Mering thus:

> We may also quote, in support of the view that carbohydrates are formed from proteid, the fact that in severe forms of diabetis mellitus, under a protracted

and exclusive flesh-diet, the secretion of sugar does not cease, and that the quantity of sugar increases in proportion to the amount of proteid consumed.

It would seem wise, therefore, to allow these patients considerable carbohydrate food in order to save the other tissues. The metabolism of the liver may be influenced by anatomical lesions which interefere with a free circulation of the blood to the liver, and with alterations of the normal nerve impulses which reach the liver.

While many physiologists hold that liver metabolism is regarded almost wholly by the circulation, it is just possible that the nervous system is directly and intimately connected with cell functioning here.

By stimulating the great splanchnic nerve, Morat and Dufourt caused an increased activity of sugar formation in the liver at the expense of the glycogen of this organ, and they observed that this effect is not directly subordinated to the hepatic circulation, which proves the existence of distinct nerves controlling the intra-cellular chemistry of the gland. This is an example of an internal secretion controlled by the nervous system.—*Morat.*

If this experiment is correct, it would be reasonable to conclude that other functions of the liver may also be under the direct control of the nervous system, and that anatomical lesions may modify liver metabolism by suppressing, or augmenting nerve impulses to this organ. At any rate, we know that anatomical lesions, by stimulating or inhibiting vaso-motor nerve-fibers, derange the circulation to the liver and that by so doing, suppress or prevent the metabolic functions of the liver, and thus bring on disease.

It seems eminently rational, in order to insure normal health to the body, whether the disease be hyperaemia of the liver, jaundice, amyloid liver, biliary calculi, or some more remote effect of liver disease, for us to remove the anatomical lesion causing such perversion of function. If the circulation and nerve impulses are the dominant factors in controlling liver metabolism, we should adjust the anatomy so as to insure these two factors to the liver, and thus normalize liver functions. Many complicated diseases have their origin in nothing more serious that a derangement of the circulation, and, if at such times, or even later, the proper anatomical adjustment were made to normalize structure, the whole interdependent chain of symptoms would disappear.

If our profession could be made to understand the very great importance of the circulation to every living cell in the body, and the very unique possibilities of osteopathic technique for regulating circulation to every cell in the body by normalizing structure, there would be less use for internal medicine, not only in chronic, but also in acute diseases as well. There is not an osteopathic physician in the field who does not need to know more of the possibilities of his own science. And we can get this knowledge by delving deep into all the sciences relating to vital phenomena.

Traction Terminal Bldg.

SANITATION

C. A. Whiting, Sc. D., D. O.

THE SPOTTED FEVER TICK OF THE ROCKY MOUNTAINS

Before the advent of the white man to Montana it was a matter of common knowledge among the Indians of the Bitter Root Valley that they were subject to a severe and frequently fatal form of fever; it is also known that they thought the region where they were subject to this fever had very definite geographical boundaries. It is now known that the same disease is found not only in Montana, but also in Idaho, Oregon, Washington, Nevada, Utah, Wyoming, and Colorado, and to a limited extent in the northeastern corner of California.

No scientific study of this disease was made until 1902. In that year Doctors Wilson and Chowning announced their belief that the wood-tick, which is common in the region in which this disease prevailed, was in some way the agent by means of which the disease is transmitted from one human being to another. Their belief was based upon three facts which they had observed; the first was that in a large number of the cases of spotted fever, as the disease was commonly called, the patients were able to give a definite history of having suffered from the bite of a wood-tick; the second was that ticks are especially abundant in the region in which the disease may be contracted; and the third fact was that the season of the year in which spotted fever was most common, was the season when the ticks were most active.

The beliefs of these doctors remained without definite confirmation until 1905, in which year some careful experiments were made at Boise, Idaho. In these experiments it was definitely proven that not only human beings, but guinea pigs became infected with spotted fever when they were bitten by a tick which had previously been upon the body of a spotted fever patient. These experiments were repeated the next year, at the University of Chicago, by Dr. H. T. Ricketts, who seems to have been unaware of the work which had been done at Boise. His experiments confirmed the views which had been formed as the result of the work at Boise. Dr. Ricketts found that both the male and female tick are capable of transmitting the disease. He also found that the larval tick may not only acquire

the disease and retain it through its moulting period, but that it may transmit the disease either while it is still in the larval state or after it has reached its adult condition. He also made the highly interesting and important discovery that if the female tick became infected she may, through her eggs, transmit the infection to the next generation.

Dr. Ricketts' experiments proved five important facts: First, guinea pigs and monkeys are susceptible to spotted fever; second, larval ticks may become infected, either from inheritance from an infected female or from a human being, and they are then capable of transmitting the disease during any after part of their lives; third, what is true of the tick during the larval stage is equally true during the nymphal stage; fourth, adult ticks are able to acquire the disease and to transmit it through their eggs to the succeeding generation; fifth, ticks capable of causing the infection are found in nature.

Since the only know means by which this disease can be spread is by means of this particular tick (Dermacentor venustus) it follows that the area through which spotted fever may be spread must be coincident with the region inhabited by this particular tick. This fact has lead to a very careful study of the range of the tick, and it is found that it belongs especially to the Rocky Mountain region. Denver appears to be on the extreme eastern border of the region which it inhabits. The tick is not known at all in Arizonia, and there is only a very small part of Northern New Mexico where it is found. It is abundant in northern and central Utah, but is not found in the extreme south of that state. Western Nevada and all of California are free from this pest with the exception of a small part in the extreme northeastern part of the latter state.

One of the remarkable features of spotted fever is the fact that the disease appears to be of widely different virulence in different localities. In Idaho the death rate varies from five to seven per cent.; in Bitter Root Valley in Montana the death rate is said to be as high as seventy per cent. It is possible that the treatment which the victims of this disease receive may partially account for this wide variation in death rate. In Idaho there are at the present time about five hundred new cases each year, and from the whole area subject to spotted fever there are more than seven hundred and fifty cases each year. It is a matter of great importance to the State of Montana to have this disease carefully studied and some means found for the protection of the people from its ravages, for while Bitter Root Valley and some other parts of the state subject to this disease, are from many standpoints desirable localities in which to live, settlers will not be very likely to go there while they are confronted by this serious danger. There are careful observations being prosecuted at the present time to determine just why it is that the disease has been so terribly virulent in the Bitter Root Valley.

While the tick appears to be the unquestionable agent by means of which the disease is spread, it is probably needless to say that the tick is dangerous only when it has been in contact with a person suffering from the fever. One of the victims of this disease moving to a region where the disease has not yet appeared, but where the tick is abundant, may be the means of widely infecting ticks, and in that way make it possible to spread the disease. On the other hand, infected ticks may be transferred either by animals or by merchandise to regions where the disease has not yet appeared, and in that way the disease may be spread. It is evident that great care should be exercised in regard to all goods shipped from the Rocky Mountains region, and especially from regions where this disease has made its appearance. While there are a number of species of ticks inhabiting this region, there is, so far as known, but one species which attacks man, so this species is the only one which is of especial importance from the standpoint of public hygiene.

It is not at all improbable that when the life history of the spotted fever tick shall be fully known, some easy means may be suggested for its control, if not for its complete destruction.

It is needless to urge the point that the prevention of infection is much more important than is the means of treating this disease when once contracted, and the prevention of the disease is almost purely a biological problem. It is diseases of this kind which makes us feel the importance of the physician possessing an all-around education. It forces us to the belief that he should possess not only a broad knowledge of the human body as a basis, but that he must possess at least a partial knowledge of a wide range of more or less nearly allied subjects.

Pacific College of Osteopathy.

MENTAL THERAPEUTICS

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We cannot deny but that life is threaded through and through with an unknown quantity. We speak of the things of life with which we are familiar as the natural and of those which are beyond our comprehension as the super-natural or occult. We are adding to our store of knowledge and some things that were once considered super-natural or occult are now classi-

fied as natural. One of the books that has recently come to the editor's table which will help along this line is "Hypnosis and Suggestion, their nature, action, importance and position amongst therapeutic agents," by W. Hilger, M. D., published by Rebman Co., New York, and advertised elsewhere in this journal. The introduction to the English edition of this work was written by Dr. Van Reutergen of Amsterdam and he gives a short review of the history of psychotherapy for the last sixty years. He says:

Although Bonjour prefers to induce the most profound sleep possible for making suggestions, and Brenheim verbal treatment in all its forms, especially in the waking state, Dubois confines himself to persuasions, which in his opinion is the only successful method, and Levy believes that he has found the most perfect phycho-therapy in self-education, we may, nevertheless, assume that each of them believes he is in possession of the truth, and we may be convinced that each plays with the hand of a master upon the instrument of his choice. * * * Indeed, each of the different forms of psychical treatment has its certain indications; none of these forms is superfluous. * * *

The writer never abandons scientific ground, neither does he deck out his evidence with exaggerated accounts of the marvelous. He knows how to communicate in a simple manner the interesting results of his serious psychological research and therapeutic experience.

In Part I the nature and method of Hypnosis and Suggestion are discussed. The nature of sleep and of dreams is discussed as they relate to the subject under consideration. "Hypnosis is a state of sleep." "The sleep so produced is, as we have said, the result of the action of 'suggestion.'" "Now let us go back a little farther, and we have the idea of the 'link of association,' the 'pathway' and the 'suggestion,' as well as the connection of these ideas with the 'reflex' (the 'physical' and 'mental' reflex), 'memory pictures' and 'imagination.'" "We must not start from the material side, but from the mental life." The action of the will of the patient plays a very important part so Part II deals with "suggestion and will." The action of the voluntary muscles is first discussed as they play a very important part. He says:

In no way, however, are our desires, motives, objects or intentions alone sufficeint for the movement of our voluntary muscles. The cyclist who rides straight at a stone and falls over it, and perhaps has his arm dislocated in the fall—as happened in one case I know of—certainly had no special desire to act in that way; rather the act is against his desire. * * *

If we men had had to construct the human mind, the cleverest of us would probably have made it otherwise, and certainly have made it so that merely the will, the motive, sufficed to bring about an action. As things are, this is not the case, and it is of the utmost importance that allowance be made for the fact just mentioned, and that what we observe in real life should be added on in practice.

Then the author treats of suggestion, exercise, visualisation, motive-power, appetite and disgust and then their relation to the will.

Part III opens with this statement, "Let us now consider in what way and in what measure a sick person is able sucessfully to avail himself of his own will-power, and how the physician can best support this power." He shows that in this connection *attention* plays a very important part.

Part IV considers the diseased disturbances of reflex activity and their treatment. In this chapter he discusses what he calls the hardening process. It "consists in the patient learning to ignore the irritation; this is then gradually allowed to increase in intensity, in proportion as the patient learns to ignore the irritation and becomes hardened. He says "a similar process has been successfully employed by Dr. Saenger, of Magdeburg, in the treatment of asthma." In conclusion he says, "Psychotherapy is not a universal remedy; it does not ignore other methods of treatment, but, on the other hand, completes them."

"Rational Living" by Henry Churchill King, president of Oberlin College, will be found helpful reading for the physician. The subject is treated from the religious standpoint, but it contains suggestions that are helpful for the physician. In considering evidences for the unity of mind and body he says, "To take but a single instance, the effect on circulation, every least mental activity—feeling or thought—affects the circulation of the blood. This is particularly striking in the brain."

Mosso's ingenious experiments here make the connection of thought and circulation of blood in the brain incontestable. He placed his subjects upon a table so carefully balanced that the slightest increase of weight at either extremity would turn the scales. He found that any active thinking by a subject, like the solving of a problem, would at once cause the head end of the table to go down, in consequence of the influx of blood to the head. Sometimes the subject went to sleep on this "scientific cradle," and it was found that even in sleep so slight a disturbance as the moving of a chair was enough to cause brain activity sufficient to call for such influx of blood as to make the head end of the table go down. * * *

Heule has shown, also, that the depressing emotions increase the contraction of the smooth unstriped muscles of the arteries, skin, and bronchial tubes, while exciting emotions make them relax, and so believes himself able to trace even the "natural history of the sigh." * * *

One's possible influence over another in no small degree depends upon the range of his interests; for influence normally requires sympathetic understanding, and sympathetic understanding means the ability to enter into the interests of the other man—to see the matter from his point of view. Here lies the main task of every teacher, and of every leader of men, who does not mean to be a mere demagogue. * * *

In organic diseases, therapeutic intervention may act materially either on the lesion or on the symptom. But man does not suffer as an animal. He does not feel only the crude, painful sensations; he exasperates them by his fears and his pessimistic reflections. Often what he calls his soul, is more diseased than his body, and sometimes his moral suffering which succeeds physical illness persists, even when a real improvement has already taken place.—*Dubois.*

* * * The unconscious life has no power of discrimination but by a physiological law it is chained to one's emotional nature, and if we make a *mistake* and become frightened at a wax figure, the unconscious processes will be as profoundly disturbed as if we saw and were frightened at a real robber.

The unconscious processes may be stimulated just as much by a deep faith in an imaginary power as in a real power.

It is the measure of the fear in one's mind and not the power existing in the object of one's fear that determines the effect upon the body. Likewise it is the measure of faith and not its reasonableness or power in the object of the faith, that produces effect upon the unconscious processes of the body.—G. E. Gorham, M. D., in discussion of the physiological effects of faith.

Dr. Corning in his work on "Brain Exhaustion," says: "Habits of consistent intellectual supervision of the emotions when once formed are one of the most precious acquisitions of life." He also gives the following rules for those of scanty mental reserve power. Avoid "(1) excessive emotions, (2) frantic attempt to accomplish in one hour work appropriate to two; (3)every species of excess which experience has proved leads to general constitutional drain, (4) attempting to do two things at one and the same time, (5) petty engagements which interfere with sleep."

Let not the littleness of people disturb you. Remember that if you have been made big enough to do big things in life, you have been made large enough to overlook little things. So do not imagine you are great so long as by sifting yourself you find jealousy, hatred, malice or even the spirit which pets in your heart. These and Greatness sleep not in the same soul.—*John T. Moore.*

Current Comment

C. C. TEALL, D. O., *Editor*, Fulton, N. Y.

VACCINATION

Probably it will not be considered within the province of the editor of this department to comment upon what appears in the pages of this JOURNAL, but he cannot withhold a word concerning the article by Dr. Deason in the last issue on "Vaccination from an Osteopathic Standpoint." As concerns smallpox the editor feels we might with propriety accept it as expressing our principles as a profession and incorporate it in our articles of faith. So far we have never taken a definite position on this much discussed and important question.

The homeopathic school has rather straddled the question and wavers between internal vaccination and the real thing—the latter so not to offend their bigger brethren of the drug faith.

The question is frequently asked how we stand, as a school, on the subject and we should be in a position to speak with authority. As to other vaccinations and the use of serums in general, they are too young for a superstition to have grown up around their use and we are not in sympathy with them. The Stuffed Club speaks out with no apology as all who know its editor, Dr. Tilden, would expect and this excerpt from an article in the December issue is to the point. Using a press dispatch for a text, of which this is a part:

Antitoxin will never fail to cure diphtheria, if it is used early. One has only to compare the death-rate from diphtheria before the use of antitoxin with the death-rate under its use, to receive incontestable evidence of the benefits that result from its use.

He makes the following characteristic comment and it meets the approval of most thinking men—layman or professional—who understand the real condition of affairs:

The next-to-the-last paragraph requires a little illumination: "If used early enough." How is that to be beaten? It is invincible, and shuts out argument and comment; for if a patient dies, the dope was not used early enough. Reader, don't forget that the germs are found in healthy throats, in people who are well; they get on without antitoxin; so do people who have sore throats. What cured diphtheria before the days of antitoxin? Except in malignant epidemics, the per cent. of recoveries before the use of serums was as great as now, except when patients were killed by the treatment of those who are now advocates of the antitoxin. A rational treatment will never fail, "if given early enough," except in those cases that are necessarily fatal from their malignancy. * * *

I want to ask you Napropaths, Osteopaths, Chiropractors, Christian Scientists, Mental Scientists, and all so-called schools of drugless healing, if serum therapy is in keeping with the fundamental principles of your systems of healing? If it is not, then why do you compromise? Do you believe in the theory? If not, why not?

These questions apply to everyone who will be kind enough to answer them, including anti-vaccinationists and anti-vivisectionists. I really want to know where I stand. If I am the only person who will stand up against this damned superstition, I certainly want to know it, so that I shall know on whom to train my guns and lay my club.

Those who ignore this request will be recognized as in favor of serums.

Nothing is surer in this world than this. If the manufacturers of serums and vaccines should withdraw their publicity and discharge their press agent, the sale of these preparations would fall off in a degree to put most of them out of business. Statistics have put diphtheria antitoxin in the position it now occupies and it was brought about by calling every sore throat diphtheria and so each recovery went to swell the padded report of its infallibility. President Garfield once said, "There are lies, d—— lies, and statistics." A great deal of medical progress bolstered by statistics, comes under this head.

The attitude of the homeopathic doctor toward vaccination is shown by the following from one of their journals:

A PENNSYLVANIA VACCINATION COMMISSION

With the thoroughness that has marked his administration of the office, Health Commissioner Dixon of Pennsylvania, started in some months ago to institute a vaccination campaign throughout the state. Much opposition was engendered and the "antis" were strong enough politically to secure the passage of a bill through the state legislature making vaccination optional instead of compulsory. This bill the Governor vetoed, it is said, on the recommendation of the Health Commissioner. A truce has been declared for the time being, however; the vaccination campaign being suspended while a commission appointed by the Governor under authority from the legislature, inquires into the value of vaccination as a preventive of smallpox. On the commission the provaccinationists are represented by Drs. J. Frank Schamberg and William M. Welch. The "antis" have for their proponents John Pitcairn and Porter F. Cope, the latter the secretary of the Antivaccination League of Pennsylvania and also of the National Antivaccination League. Three jurists complete the commission, chosen presumably because of their training in sifting and weighing evidence.

The specified duties of the commission are to "examine into the history, nature, and pathology of smallpox; the means to be employed for diminishing the prevalence of and the mortality from the disease; the history, nature, and pathology of vaccination; the original sources from which the various strains of vaccine virus now in use have been obtained." It is also to make a study of the mode of preparation of vaccine virus and of other matters pertaining to smallpox and its treatment.

If this commission does its work thoroughly, its reports will be of great value. There are a number of sides to the vaccination question: does vaccination protect against smallpox? If so, how long? Is it attended by any danger? If so, what is the danger, and is it avoidable? Is the danger from smallpox so much greater than the danger from vaccination as to warrant the state in enforcing compulsory vaccination? Is it safe to leave the enforcement of compulsory vaccination until the community is threatened with an epidemic? Is sanitation alone as efficient a prophylactic as vaccination? Is there any other substitute for vaccination as ordinarily practiced which approaches vaccination in its efficacy?

The writer then goes on to say that the question of vaccination has always provoked discussion among practitioners of that school, for the teachings of their founders had been that deleterious effects might follow, but the majority seems to have conceded that experience shows the benefits outweighs the possible dangers. These are the ones, we presume, who indulge in the luxury of "statistics" and allow them to form an opinion on the subject.

He further discusses the use of variolinum as "internal vaccination" and says it has the backing of many able men in his profession who are unalterably opposed to the use of virus.

The department editor would be glad to see the report of the commission and will thank anyone for it, should it miss his eye.

HOMŒOPATHIC PROPAGANDISM AND THE LEAGUE FOR MEDICAL FREEDOM INCOMPATIBLE

Field Secretary Arndt sees trouble ahead if a check is not put on the enlistment of homœopathic physicians as auxiliaries to the patent medicine interests and Christian scientists. In the February issue of the *Journal of the A. I. H.*, he says: "All should realize that conspicuous public affiliation with the League is bound to place the homœopathic organization in a false position." He then goes on to say:

"It is also a fact which we cannot afford to forget that the so-called Christian Science cult is as aggressively hostile to homœopathy as to any other form of the practice of medicine. An experience of more than twenty years of constant contact with the Christian Science healer has amply proved that any movement which might place its advocates in power, or success in securing all they demand for themselves, would result in a state of affairs absolutely intolerable. The heel of the dominant school of medicine pressing upon the neck of any and all dissenters as it has in the past, could not be as disastrous to progress in therapeutics or to the best interests of mankind as would be the arrogance and intolerance of a fanatical body of men and women without education in medicine, without the consciousness of any kind of responsibility, and without concern for anything but the success of a cult whose very existence and whose rank growth constitutes one of the gravest reflections upon the present civilization."

THE PRESENT POSITION OF SALVARSAN

To the Editor of *The Lancet*—Sir: In view of the controversy at present raging as to the benefits to be expected from the arsenical treatment of syphilis, one is forced to ask the question, Is it really as efficacious and curative in *the long run* as mercury and should we discard the latter drug as the routine treatment? I have had 29 years' experience of treating syphilis and conscientiously believe from the proved results of my treatment of many scores of cases which have been under my care from start to finish that when mercury is properly and adequately administered it will actually cure syphilis. * * * I have no hesitation in saying that mercury, when adequately and judiciously administered, cures syphilis. I would think twice before making such a dogmatic statement in regard to arsenic. It would now appear that aural symptoms are not uncommonly met with during the early stages of syphilis, or rather since arsenic commenced to displace mercury in the treatment of the disease. I would like to apologize to the many students to whom I have taught the rudiments of syphilis for not having mentioned this seemingly common symptom, for the simple reason that I was unaware that it occurred. I am, Sir, yours faithfully, Campbell Williams. March 4th, 1912.

THE PASSING OF "606"

To the Editor of *The Lancet*—Sir: Of the making of new preparations of arsenic there appears to be no end. Atoxyl was followed by arsacetin, with variations in the form of soamin and orsudan. Then came arseno-phenylglycin and salvarsan. Each of these was said to be better than its predecessor, and when salvarsan appeared the millennium was in sight! But, although salvarsan has already been in use for two years, it has already been superseded by "neosalvarsan" or "914." No doubt this will be followed by other modifications or substitutes. Now, if there were any evidence that arsenic cured syphilis— for the basis of all these preparations is arsenic—there would be some reason for their continued manufacture, but there is no such evidence. Arsenic is nothing more than an auxiliary drug in the treatment of syphilis, and a dangerous one too. The organic preparations of arsenic are especially dangerous, owing to their unstable composition and liability to toxic effects. Unfortunately, the scientific value of chemio-therapy has been overshadowed by the commercial elements. I am, Sir, yours faithfully, C. F. Marshall. June 22, 1912.

With reference to salvarsan, it is not yet decided and will not be for years to come whether six or a dozen doses will effect a permanent cure of syphilis. Yet in many cases brilliant results have been obtained by its use, but the same thing has been obtained with mercury and iodin. So I would reiterate what I said a year ago, that I regard salvarsan as a great addition to the therapeutics of syphilis, but I do not think it can displace mercury.

The last from a paper by Dr. Glenn, Nashville, at the Mississippi Valley Medical Society meeting in March. These clippings are given to show how soon can a wonderful specific, heralded abroad and making many rich in a moment, fail as have multitudes of others gone before and as will many yet to come, for a sick and credulous world is holding out its hands for help.

CHRONIC APPENDICITIS

Kiær gives the details of eleven cases of chronic appendicitis which show that it is possible for it to manifest itself in the form of merely stomach or bowel trouble with or without very slight focal symptoms. In some cases it is only by prolonged study of the cases, especially repeated local examinations and taking the temperature after exercise, that it is possible to differentiate the true cause of the trouble. When appendicitis is suggested one may learn of disturbance, suggesting previous abortive acute attacks.—Ugeskrift for Læger, Copenhagen.

Roll gives the details of eleven cases in which the symptoms were those commonly explained as due to chronic appendicitis, but the trouble proved to be relics of inflammation of the tissues in the vicinity with adhesions at different points. The adhesions may form sheets attached to the cecum and appendix, or in the neighborhood of the hepatocolic ligament, spreading thence in various directions. He is convinced that these adhesions may develop from mechanical causes alone, when the ascending colon is usually short. The peristaltic movements drag on the short colon until the weakest attachment yields, with resulting downward displacement of the parts. With stout muscular walls the intestine may be held in place for a time, but if the abdominal wall grows flabby or the muscles relax from fatigue, the intestine suspended by its adhesions, drags on the peritoneum, entailing symptoms interpreted variously as nervous dyspepsia or neurasthenia; the bowel functions become irregular, and when the feces are passing the points of internal derangement, nausea, colic or other pain may be felt, possibly incapacitating the patient although the anatomic lesions are in reality minimal. A moveable kidney may aggravate the condition. Bed rest and small frequent meals will relieve conditions, but disturbances recur when the patient returns to work. This is an aid in differential diagnosis; an actual cure is generally possible from operative measures alone.—Norsk Magazin for Lægevidenskaben, Christiania.

Roeder reviews the literature of movable cecum and gives some personal experiences with this condition and its surgical treatment. He has seen it produce symptoms resembling those of chronic appendicitis. If a surgeon operating for this latter condition finds only a kinked appendix, he should look for a prolapsing cecum. The latter produces constipation by traction and narrowing of the ileocecal valve, and some cases of pylorospasm may be caused in this way. —*New York Medical Journal.*

The appendix is not the *fons et origo* of all of the pathologic changes found in this region. Admitting that chronic changes in and about the appendix are common and that these changes frequently give rise to well-marked and often distressing symptoms, I wish to emphasize the fact that there are many cases in which the appendix is innocent and in which the real trouble is to be found in the cecum or the ascending colon.—Dr. M. L. Harris. "Adhesions of the Colon." *J. A. M. A.*

These come from widely separated authorities and show that they are beginning to realize that every pain in the right iliac region is not appendicitis and does not require operation. If to this were added the multitude of cases from osteopathic sources, where the innominate and lumbar were at fault, it might much reduce the number of unnecessary and unsuccessful operations for so-called chronic appendicitis.

LIGHT CAUTERIZATION OF THE NOSE IN TREATMENT OF ASTHMA

Bonnier, in the *Archives Generalés de Médécine*, Paris, gives in detail his method, of which this is sufficient to explain:

The aim in treatment is to stimulate and restore normal conditions in the central office, the regulating centers. He has found that in asthma it is possible to act on the morbid conditions in the air passages by stimulating the bulbar centers governing them, and that an effectual means to stimulate these centers is by mild cauterization of certain points in the nose. He warns that the aim is not to treat the nose, but the asthma, and consequently cauterization should be restricted to only what is needed. The points to be cauterized he says are known to every child who has ever tried to make another sneeze by tickling his nose with a feather. Tickling these points causes sneezing, coughing or lacrimation. Pressing on the nose just below its bony framework will arrest a sneeze if it is not too far on its way; pressure by the tongue on the inside of the upper jaw will also compress the nerve involved and arrest the sneeze. With the tip of the cautery—the current not turned on—the nose is gently explored until a point is found which cannot be touched without the patient's lid quivering or lacrimation. As soon as this point is located, the current is turned on for slight cauterization, very lightly done. The stimulus that causes sneezing is a slight one; a blow with the fist does not make one sneeze. The nerves respond to a slight, gentle stimulus when they remain passive under powerful attacks on them.

Two cases of asthma have come under the editor's observation recently where the first attack followed a nasal operation for the removal of a hypertrophied turbinate, and, while both responded to osteopathic treatment, it is interesting to observe them along with Bonnier's method, by which he claims to have cured 75 out of 100 cases and some of very long standing.

THE MODERN MEDICAL CLINIC

Under this title Dr. Sheldon writes interestingly and, as we shall see, hopefully, on the requirements and purpose of such an institution. The cutting is from the *Medical Record* and kindly sent by Dr. Florence Gair. Under equipment he says:

A Mechanico-Hydrotherapeutic Equipment is of the utmost importance, for this method of treatment is of the greatest benefit in various diseases. This is particularly true of chronic joint conditions, as numbers of these patients become cripples simply for lack of this treatment. Some nervous cases, which have been drugged for years without improvement, are greatly helped by hydrotherapy and mechanicotherapy, while in circulatory and kidney diseases its value is well known. Diseases of metabolism and chronic intoxications are more often relieved by this method than by any other.

We are far behind the European clinics in regard to this valuable therapeutic measure. In a city like New York, where there is so much wealth, there should be little difficulty in obtaining the funds necessary to its installation in certain of our dispensaries. I venture to say, moreover, that if this equipment were more generally *installed the osteopaths and others would soon* be forced out of business. Doctors have shaken public confidence by promiscuous drugging, and they must restore it by the intelligent use of other therapeutic agents.

"ALLOPATHS"

The editor has always objected to the term "regular" and has never used any other than allopath and never will, so the following is appreciated by him at least:

"ALLOPATHIC."—Three reputable and eminent physicians of Atlanta, Ga., have addressed a letter to the publishers of the Atlantic City Directory remonstrating against the "A" for "allopath" put after their names to distinguish them from the "H" and "Ec" tribes. Among other things, they say that "A's" "are physicians—regular physicians, if you prefer—and it is impossible to apply a qualifying term that appropriately describes their status. They hold that it is inconsistent with the dignity of a learned and honored profession to be designated by a nickname or by any appellation of restrictive significance, and that it is entirely at variance with propriety and the facts to describe their faith or practice by a word, when they are not, in any manner, bound or limited in their views of disease, the selection of remedies, or the application of remedial agents." The *Recorder* has often sought for a term to designate what is commonly known as an "allopath" because the term is objectionable to many estimable gentlemen—but has been unable to find one. "Scientific" is not true because science is exact; everywhere the same. "Modern" is meaningless, for all are modern. "Regular" is open to the same objections that apply to "scientific" because they are not regular, but at variance with each other. Neither the public, the English language, or the truth would stand for "physician" to the exclusion of every one else, for the word covers many species. In fact, and without any jibe, it looks as if, according to the above text, quoted from the estimable trio of Atlanta, St. Paul's (it was Paul, wasn't it?) definition of the "heathen" alone would literally apply—each "is a law unto himself." Our allopathic (to revert to the primitive) friends ought to get together and select some distinguished designation if they do not like the old one, for the world will never let them have a monopoly of the word "physician." Finally, why not accept "allopath?" It is a good term.—*The Homoeopathic Recorder.*

Legal and Legislative

THE ACQUITTAL OF DR. PELLETTE

Several times within the last year the JOURNAL has noted the series of prosecutions or persecutions brought by the County Medical Society against Dr. Eugene F. Pellette, of Liberal, Kansas. Those who have followed the case in particular and the profession in general will be much pleased to know that at the final trial on December 12th, the jury returned a verdict of not guilty.

The trial had been postponed repeatedly and the county attorney had informed Dr. Pellette that the case would not be tried at that term of court, but his attorney found they were preparing to try it and they tried to get their witnesses. The case was called and found him in bad shape for the trial; as an out of town attorney, upon whom he mainly depended, when notified to come informed them that he was engaged and could not leave, and Drs. George J. Conley of Kansas City and George Still of Kirksville, who were to give expert testimony as osteopaths, could neither attend. The state had subpoenied seven M. D's to appear against him. A professor of Obstetrics in the Kansas City University, the Secretary of the State Board of Health and several Topeka physicians and the local undertaker and embalmer, together with the husband of the deaseased and his father.

Dr. Pellette writes: "My local attorney, Sam Jones, was scared stiff, and we telegraphed my Hutchinson attorney to come. He wired he couldn't. We phoned him we must have him, but we did not get him, and had to enter the trial alone and without any of the osteopathic witnesses which we had arranged for and exepected. Against the above array who when it was known that we had no expert testimony undertook to give not only expert testimony as medical men, but as osteopaths, having read, they claimed, some osteopathic literature. We protested against this, but the judge, who gave the medical people every advantage in his rulings, decided that if they had read osteopathic literature, they were capable of giving expert testimony on that subject. This, of course, was all given on a 'hypothetical' case, based on what they assumed to be the facts, as none of them had seen the case in question.

"The M. D's ridiculed my procedure of placing the patient reclining on an inverted chair in the bed during the second stage of labor and testified that that alone would kill a patient by wearing her out, making labor harder and longer and by causing dilatation of the heart and all internal organs and finally cause the

hemorrhage. They were somewhat taken back when I read out of Dr. Still's latest book, 'Research and Practice,' that this was the right osteopathic method of delivery. The husband and mother of the deceased testified for me in that they had seen no hemorrhage and they alone were enough perhaps to save the day. The father of the husband, however, was prepared for some perjured testimony which he gave to the effect that I told him that I had killed the woman, that I had neglected her and that I was awful sorry, etc., that I knew I ought to do so and so, but was afraid to do it.

"I told my story straight and was put through a hot cross examination from the most sarcastic attorney which the Medical Society had employed, who tried to brow beat and scare me and confuse me, and they put the lie to me wherever they could, but I held my ground. The trial lasted through Thursday and Friday up to near mid-night and on Saturday morning, the case went to the jury, who, after two hurs, brought in a verdict of not guilty. The only witnesses I had in addition to myself was the woman who had laid out the deceased and two embalmers who testified against the local embalmer who had asserted that no blood was found in the woman's veins, trying to prove of course that the woman had died of hemorrhage. These men testified that blood is always found in the veins, a quart or more, even in people who have bled to death.

"The case was a peculiar one. The placenta failed to come away after a successful delivery of the child, and a small part of it was adhered to the uterine wall, although the uterus was contracting nicely and there was no hemorrhage, and almost the entire placenta had passed the vagina. As the county attorney had warned me that he would prosecute me if he caught me in any kind of an operation, I thought it best to send for a physician, who would remove the placenta manually. I had tried the Crede Method without result. The doctor came, and after inserting his hand twice to get the placenta, the woman expired.

"This trial appears to close a series of persecutions against me, brought by the druggists and doctors within the past year and a half, consisting of beating, neglecting and starving our children, assault and battery, several other minor charges, some of which never came to trial, and others on which I was acquitted after farcial trials. On this case they chose to try me for murder and although our witnesses were in attendance when it came up before, it was postponed and the judge said he would throw it out of court, but the prosecution prevailed on him to give this one more trial, which he did with the above results."

Eugene F. Pellettf, D. O.

The charge of the judge is to the point and well worth reading, as it covers general grounds and at the same time is an encouragement and a warning to keep within the school of practice:

"You are instructed that the information charges that the defendant, E. F. Pellette, was, on the 5th day of October, 1911, a doctor of osteopathy, and that at said time, well knowing that he was *not* authorized by law in the state of Kansas, to treat child birth illness, he did attend upon and treat one Lelia Belle McNabney, there and then being confined and ill with childbirth.

"You are instructed that under the law of Kansas, a doctor of osteopathy *is* authorized to practice his profession if duly licensed by the State Board of Registration and Medical Examination, and that if said Dr. E. F. Pellette was at said time duly licensed by the State Board of Registration and Medical Examination, he had a lawful right to practice his profession as a doctor of osteopathy in *all* of its branches *as taught in a regularly licensed school of osteopathy* from which he may have graduated, and that he would not be guilty of unlawful practicing osteopathy in treating Lelia Belle McNabney during her confinement, if he was so lawfully licensed to practice osteopathy in Kansas, including the furnishing of relief in child birth illness."

A DECISION AGAINST CHIROPRACTIC

Dr. W. B. Shepard, president of the Rhode Island Osteopathic Society, sends in the following essential facts in a decision handed down by the supreme court of the state recently declaring chiropractic the practice of medicine in that state. The decision will be of interest at this time, in view of the rapidly increasing numbers of this cult and of the actions being brought against them in many of the states.

Dr. Shepard says that since this decision was rendered, a neuropath has been arrested on the same charge and some think that the osteopaths are next in line. A decision against osteopathy there or even any activity against them on the part of the medical profession would doubtless aid in securing action from the legislature. Other decisions which may be useful in considering the legal aspect of chiropractic may be had from the Secretary of the A. O. A.

EXTRACTS FROM THE SUPREME COURT DECISION

Swartz v. Siveny

(Supreme Court of Rhode Island, Dec. 6, '12.)

In the case of State v. Mylod, 20 R. I., 632, 40 Atl. 753, 41 L. R. A. 428, it was held that in the construction of penal statutes it was the well-established rule that words and phrases must be taken in their ordinary acceptation and popular meaning, unless a contrary

intent appears; that the practice of medicine as ordinarily or popularly understood, has relation to the art of preventing, curing, or alleviating disease, and consists in the discovery of the cause and nature of disease, and the administration of remedies or the prescribing of treatment therefor. The practice of medicine does not wholly depend upon the administration of drugs. It is a matter of common knowledge that the use of drugs by doctors of medicine has materially decreased, especially during the last twenty years or more, and that not infrequently the medical practitioner limits his efforts to cure or alleviate disease to the regulation of diet and exercise, or to prescribing some change of scene, climate, or environment, reaching a conclusion as to the needs of his patient after learning his physical condition, through a proper diagnosis, in which he is materially aided by his knowledge of disease, it sorigin, its anatomical and physiological features, and its causative relations.

The question now is: Has the defendant been guilty of practicing medicine within the terms of the statute, the phase "practice medicine" to be taken in its ordinary acceptation and popular meaning? We think he has. He has undertaken by a certain system or method of treatment to cure or alleviate disease or pain.

Some of the decisions on the rulings of the Supreme Court:

An information charging that accused held himself out as a practitioner of medicine, willing to practice the art of preventing, curing and alleviating disease for reward, accused calling himself a chiropractor, instead of a physician or surgeon, is sufficiently definite.

[Ed. Note.—For other cases, see Physicians & Surgeons, Cent. Dig., §§ 6-11; Dec.-Dig., § 6 *.]

Physicians & Surgeons (§6*)—Practicing without a License; Evidence.

In a prosecution for practicing medicine without a license, evidence as to the cures effected by accused is inadmissable, being immaterial.

Physicians & Surgeons (§6*)—Practicing without a License; Trial; Instructions.

Where a chiropractor was prosecuted for practicing medicine without a license, the question for the jury is whether accused was guilty of practicing medicine or surgery without a license and not whether the chiropractic science is the practice of medicine.

Correspondence

AS TO CHIROPRACTORS, ETC.

We find ourselves in this situation: Having won our legal fight in most states we are still helpless to make the law move against the faker, owing to the difficulty of getting evidence. We still have him with us, and apparently as bad in the states that have a law as in those that have none. This causes one to wonder whether we asked for just the right law, just the right provision in the law.

The concern of each school of practice is for its standard professionally, which means its credit with the public. Each has a right to go to the legislature and demand protection for property, the wealth, they have created; to wit, the respect and confidence they have earned. That is their capital. The medical profession has the right to prevent any one from using the title Doctor of Medicine or any equivalent thereof unless he conforms to the standard set therefor by those who have made the reputation of the practice. With this their rights stop.

The osteopathic profession has the right to set standards for its practice and to prevent any one from claiming to practice osteopathy who does not conform to that standard. So claiming would be to steal from the osteopathic profession the reputation it has made and to steal from the public under pretence of giving it properly qualified osteopathic treatment. The profession has a right to demand protection from such theft. There its rights stop.

The medical profession itself has not the right to forbid any one using medicine, experimenting with it to see what good can come of it, etc. That would be mere selfishness and greed. But, if the practice be dangerous, the *public* has the right to demand protection from such practice by unqualified persons. That is the concern of the legislators. The medical profession may appear before legislatures on behalf of the public and show the dangerousness of such practice and ask for a law to restrain persons without due qualifications in that branch of sceince.

The osteopathic profession also has the right to demand absolutely the protection of its name and reputation from persons whose training is less than or other than the standards it has set. This indeed is all that it needs. With laws allowing this protection, the bare fact of saying one could practice osteopathy, or having the name or equivalent on a sign, would be *prima facie* evidence of violation of the law. It would then be comparatively easy to rid any state of fakers.

But only insofar as its practices may be dangerous has the osteopathic profession a

right to ask the state to protect citizens from others who under a different name may practice the same or similar measures. Nor has any one the right to prevent development of parallel systems, offshoots from his own or things independently discovered. The regular medical profession had no right to restrain the growth of homeopathy. It may be questioned if we have this right to prevent the growth of chiropractic, as such.

To what extent we may move on ground of dangerousness against chiropractors and others is a matter concerning which I do not feel competent to judge. That they cannot do so much *good* as properly qualified osteopathic practice, of which their system is a violent imitation, is one thing. Whether they can do sufficient harm to justify legal restraint without proper standards is another. Just to get the matter clear in our minds, let us consider the matter of Dr. Albert Abrams and his spondylotherapy. It is one question whether Dr. Albert Abrams can do as much good as osteopathy, and quite another whether he can do enough harm by his development of one insignificant fraction of our practice to justify some form of protest. If he injures the reputation and credit of the science of osteopathy or trades upon its success, our right to protect would be unquestioned. If his practice were dangerous to the public the necessity for standards and restraint would be evident. If, however, it is merely a variation with possible benefit to the public and the future of science, we have no ground for protest except selfishness and greed.

We may well ask ourselves the same question with regard to the chiropractors. Our own arguments against various forms of legal and moral injustice are too recent in our own ears to be passed by without at least carefully considering them.

In any case, the only perfect reply to the invasion of the field by chiropractors and pupils of Abrams and others is to fill it with a fine brand of osteopathic physicians. It will do no good to drive out the devil unless we have something better to take his place. Otherwise we will but invite seven others, worse than the first.

ERNEST E. TUCKER, D. O.
37 MADISON AVE., NEW YORK.

EDUCATIONAL CONDITIONS OF THE NEAR FUTURE

May I ask for space in the JOURNAL to submit a few thoughts concerning the osteopathic education of the future?

A knowledge of the condition of general medical education in this country today and of the legal requirements for practice in the different states, shows that a transitional stage is being passed through. That the changes of the future will mean higher standards for education and more rigid legal requirements for practice is a foregone conclusion.

Without venturing too definite a prediction, it seems reasonable to assume that in ten or fifteen years the uniform requirements for education and practice may be something as follows: A two year college course as minimum entrance requirement; a demand for laboratory, hospital and other facilities on a par with those of the dozen best medical colleges of today, and a compulsory fifth year of hospital service. The practice of major surgery and the other specialities may be further restricted. On the whole, the results of these changes must be beneficial.

As osteopaths our first concern is with their effect on our own profession. If osteopathy is to gain an equal position as a school with that of the so-called "regulars," and is to have equal rights of practice under the law, of course it will have to maintain similar educational standards. The question then is, can our colleges attain those standards within the probable time at which they will be required?

It does not seem to me that they can for the following reasons: First, the cost per capita for education as outlined above will be greater than any tuition fee that can be charged, therefore the college will have to depend on something beside income from tuition for running expenses;

Second, through staff appointments and otherwise the "regulars" have a strong hold on all public hospitals and therefore the osteopaths will have an expense and inconvenience in furnishing clinical facilities which the old school avoids;

Third, the number of students in osteopathic schools under new conditions would diminish proportionately with those of the other schools, which, owing to our present numerical weakness, would be wholly undesirable.

Is not the osteopathic profession approaching a dilemma? One alternative requires a reduction in the number of schools to two or possibly three, with a corresponding reduction in the number of students. These schools must meet the new requirements and be supported by endowment and contributions from the profession.

The other alternative will mean we admit the impossibility of so soon meeting the educational standards of the law, and obtain separate acts and less high requirements for practice in the different states. This will of course be accompanied by certain limitations, so that osteopathic practice will only cover part of the general field; in other words, we must temporarily accept a place as a department of general medicine.

Neither of these alternatives is wholly satisfactory. The objections to both are plain. Of the two, it seems to me that the second is less objectionable. Many of the best undergraduate and graduate osteopaths who have done and will do the most for the profession, are those whose preliminary education would not meet the new requirements. By the second plan, such valuable men would not be kept out. Our colleges, several of which are doing splendid work, could keep on under their present organization until such time as some sort of reorganization would come as a natural and unforced development.

This second plan would best serve to hold our principles intact, and permit all energies of teaching staff to be directed to turning our rational "simon pure osteopaths," unhampered by the necessity of meeting arbitrary standards

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HOT AIR TREATMENT IN DERMATITIS

In view of the difficulty which is often encountered in overcoming skin affections, the following case reports might be interesting and helpful. The first series of cases are from the records of a German Krankenhaus at Oschersleben under Dr. Esan, and both series of reports are translated from *Archir fuer Physikalisch-Diätetische Therapie:*

1. For months a woman of 36 years suffered with a symmetrical eczema of both shoulders and arms as well as both legs. The case had thus far withstood all treatment. The itching was a torture. At intervals there was swelling and reddening of the face, followed by induration and scale formation. After beginning the hot-air treatment on an upper arm, the itching stopped at once; after eight treatments, the entire body had a healthy skin and the swelling of the face did not reappear.

2. A boy of ten suffered for six months with a soreness of all fingers of both hands, of the back of the hand, and the forearm. The boy was beside himself from the itch, was much run down with the suffering and a great trial to his family. For some time he had been under specific treatment. Both hands of the pale boy were covered with crusts and scales, the removal of which disclosed a raw surface with bleeding cracks. The boy scratched continually. After the first hot-air bath, no improvement; he had to be cooled the entire night. After the second bath, which was again applied only to the worst hand, the itching ceased entirely. From this on all crusts and scales came off rapidly and all parts became covered with normal skin.

3. A man of 36, both of whose hands were extensively affected like those of case No. 2, and whose healing had not been induced under other treatment, was healed in the same manner and in a like short time.

4. A child of 1¼ years had been in the following condition for three months: The face, with the exception of nose and chin, in part also the hairy part of the head, had a watery discharge, the child scratched continually, and thick crusts had formed; under the crusts was a tender cracked skin. Back, lower abdomen, and groin were in a similar condition, though not as severe. After two hot-air douches the condition appeared somewhat improved. After the third application the itching was considerably less. There was almost complete healing.

Of eczemas which were prejudicial to the general health and the pursuit of occupation or business, the following are reported:

5. Man, aged 42, suffered for about a year from a general eczema with bran-like scales and large exuding surfaces. Hot-air treatment produced a complete cure in about three weeks.

6. A girl of 30 years, as the result of mercurial poisoning incurred through treatment for syphilis, suffered with nephritis and intestinal catarrh, and also developed a moist and itching eczema all over the body. Careful and at first short (¼ hour) treatment with the hot-air douche terminated the exudation after a few sittings. Several limited places again became moist, but upon applying more hot-air they promptly dried up, the scaling ceased, and the skin took on a wholesome appearance.

Two instances are given in which hot-air was used in cases of furnuculosis:

7. A 46-year-old man suffered for several months with a furnuculosis of the entire body, attended by a moderate itching. He had been under various kinds of treatment, and had spent four weeks at a university clinic. Six hot-air cabinet baths sufficed to cure the furnuculosis.

8. In a girl of 18 a furnuculosis of both arms and legs had existed for some time. From day to day a new crop of furnucles appeared. Hot-air brought a rapid change for the better. It took a little time for perfect healing, but there was no further new crop of boils. In this case there was a striking formation of colloid-like scar tissue, even in the smallest furnucles; the scar rose considerably over the level of the skin, was shining and felt hard; but these colloids vanished completely under the heat applications and left the place of the boil scarcely perceptible. This confirms other authors who have removed colloidal growths by hyperæmic treatment.

The hot-air is also very satisfactory in cases of leg ulcer. A few sittings often suffice to produce fresh, healthy granulations, and to lessen the mal-odorous secretions.

Translated by H. H. Moellering, D. O.
Landshuter Strasse 35,
Berlin, Germany.

Among the State Societies

Florida.—The largest and most successful meeting the Florida Association has held met in Tampa, December 28th. About thirty were in attendance. The program consisted of the following papers and addresses: "Typhoid Fever," J. R. Mosley, J. P. Bashaw and A. R. Turner; "Diphtheria," Ida Ellis Bush, M. Adelyn Ellis and Grace Gould; "Acute Indigestion," S. R. Love, Ella X. Quinn, Sarah Wheeler; "Colds: Prevention and Cure," C. E. MacKinnon, E. C. Kemp and Ora Dinsmoor; "Tonsilitis," Percy H. Woodall and Geo. O. Baumgras. Round table was conducted by Paul R. Davis. At the business meeting, the following officers were elected: President, Sarah Wheeler, Lakeland; Vice-President, Geo. O. Baumgras, St. Petersburg; Secretary-Treasurer, Grace Gould, De Land. The body recommended that Dr. Sarah Wheeler be appointed a member of the State Board of Examiners in place of A. E. Berry, whose term soon expires.

The closing feature of the meeting was the address, "The Evolution of Modern Medicine," by Percy H. Woodall, Birmingham, Ala. This was held in the big summer dining room of the hotel and was enthusiastically received by a large attendance of lay people.

Among the visitors present in addition to Dr. Dr. Woodall, were Drs. St. George Fechtig of New York and Lakewood, N. J.; and W. R. Dozier of Atlanta.

Illinois.—The Chicago Association held its January meeting in the LaSalle Hotel, when R. Kendrick Smith, of Boston, was the guest of honor and chief speaker, his subject being "Osteopathic Orthopedics." The discussion turned to the perfection of the X-ray and its value in diagnosis and hence in confirming the osteopathic contention of subluxation. At the close of the meeting, C. P. McConnell spoke of his experience with "Bony Lesions and Their Results" in a large number of animals.

Iowa.—The annual meeting of the Polk County Association was held December 13th. The following officers were elected: President, A. V. Mattern; Vice-President, Ada Mack; Secretary and Treasurer, C. F. Spring; Critic, S. L. Taylor; Member of Board of Censors, D. W. Roberts. The program consisted of a paper on "Gastric Ulcer," by D. W. Roberts, which was discussed in a prepared paper by Della Caldwell.

The Third District Association met at Mt. Pleasant, December 5th. The program of papers, discussions and clinics was highly appreciated by the large attendance of the profession from the district. The next meeting will be held in Keokuk. The following officers were elected: President, C. J. Chrestensen, Keokuk; Vice-President, H. H. Smith, Mt. Pleasant; Secretary-Treasurer, C. C. Card, Ft. Madison.

Maine.—The Maine Association started the new year by holding an all day session with M. E. Hawk of Augusta, January 1st. "Legislation" was one of the principle topics of discussion and in addition to the discussion by the members, Geo. M. Laughlin, Kirksville, Mo., who was the guest of honor, urged the Independent Examining Board as the most satisfactory form of legislation. Dr. Laughlin gave an interesting and instructive lecture on "Orthopedic Surgery," which was followed by a number of clinics and helpful discussions.

The following new members were elected: Frederick Kincaid, Skowhegan; Thomas L. and Ruth N. Macbeath, Rockland; Florence M. Opdycke, Virginia C. Gay and M. E. Hawk, Augusta; William Semple, Bangor, and Julia J. Chase, of Portsmouth, N. H. The organization greatly appreciated the privilege of having Dr. Laughlin with them.

Nora B. Brown, D. O., *Secretary.*

The Portland papers report that Dr. Mayme K. Tuttle, of 743 Congress Street, that city, succeeded in shooting a handsome 250-pound deer during the recent hunting season in the Maine woods.

Massachusetts.—The mid-year meeting of Massachusetts Society was held in Boston January 4th. The attendance was good. In addition to the business session which had to do with the reports of the several committees and revision of the Constitution, etc., the program consisted of two demonstrations by L. L. Drayer of Camden, N. J., on "Lesions of the Cervical Region and Their Reduction." A very profitable round table discussion was conducted by Frank M. Vaughn, and A. H. Gleason of Worcester discussed "Orthopedic Surgery." H. L. Chiles, Orange, N. J., discussed "The General Problems of the Profession."

A delightful banquet was held in the evening, over which Dr. Effie L. Rogers presided.

At the business session, Frank M. Vaughn, of Boston, was elected President for the coming year, and Mabel A. Langley, Secretary.

The Boston Osteopathic Society held its regular meeting December 21st. J. Oliver Sartwell reviewed the "Applied Anatomy of the Lumbar and Sacro-Iliac Articulations." A. F. McWilliams and C. L. Watson demonstrated "Innominate and Lumbar Technic," particularly emphasizing the value of light, easy, treatment. Physiological rest by strapping and

with belts, and the effect of abnormally long transverse processes of the fifth lumbar vertebra were considered.

Under diagnosis of innominate lesions, the value of tenderness under crest of ilium, and external rotation of leg through the action of the pyriformis muscle on the affected side were discussed. Cases associated with these lesions were reported; John J. Howard describing cases of lumbago and sciatica; F. A. Dennette cases of disorder of bladder and prostate; Emily G. Wilson cases of menorrhagia, uterine prolapse, dysmenorrhea, and discharge from the uterus.

Amendments to the constitution making the requirements for membership the same as for the A. O. A., with the application blank changed to correspond, were proposed and will be voted upon at the next meeting.

Kendall L. Achorn, D. O., *Sec'y.*

Minnesota.—At the annual meeting of the Minnesota Society on January 4th, D. J. Kenney to Minneapolis discussed "Arterio-Sclerosis and Old Age." C. W. Young, St. Paul, discussed "Visceral Ptosis." J. S. Rydell of Minneapolis made the suggestion that the profession of the state should have a hospital; the organization took kindly to the proposition and appointed Drs. Rydell, Pickler and Keyes as a Committee to ascertain the sentiment of the profession in the state regarding the same.

New York.—The December meeting of the Rochester District Society was held following a dinner at the Rochester Club on December 14th. "Orthopedics" was the topic for discussion, and several members who had attended the Clinical Congress of Surgeons recently held in New York City gave reports of the methods they had seen demonstrated.

New York City.—The December meeting was held at Murray Hill Hotel, December 21st, when the discussion of the "Cervical Region" was taken up. The applied anatomy of the structures was given by Charles S. Green. "Theory Proved in Practice," L. Mason Beeman, and George H. Merkley. Demonstration of "Cervical Technique," G. Percy Long.

At the meeting to be held at the same hotel, January 18th, G. V. Webster of Carthage, New York, will be the chief speaker in discussing "Rheumatism."

North Dakota.—The annual meeting of the North Dakota Association was held in Grand Forks, January 2d. Officers were elected as follows: President, Sten Hansen, Fargo; Vice-President, May F. Sanders, Grand Forks; Secretary-Treasurer, Orr Sanders, Grand Forks; Executive Committee, Sten Hansen, Fargo; Orr Sanders, Grand Forks; Katherine Ross, Minot. George E. Hodge, of Grand Forks, was recommended to the governor for appointment on the Osteopathic Examining Board.

Orr Sanders, D. O., *Sec'y.*

Ohio.—The annual meeting of the Ohio Society was held in Columbus, December 27th and 28th. The discussion took a wide range and legislation looking to the prevention of occupational diseases, over-work, prohibition of child labor, abolition of night work for women and enforcement of the eight hour a day law for women and children was urged by resolution adopted by the society. The organization also went on record as favoring more rigid inspection and supervision of dairies, prohibition of enforcing children to attend school held in basements, and demanding that the selection of school physicians be placed under civil service, and that a parental department should be established in the schools devoted to child hygiene and other such humanitarian regulations were heartily approved of. On motion of M. F. Hulett, the society favored the presentation of a measure to the coming legislature which would enable osteopaths under certain conditions to enjoy reciprocal relations with Ohio.

Papers were read by members of the association as follows: B. H. T. Becker, Columbus; T. J. Emely, Jackson; F. C. Bowen, Columbus; L. A. Bumstead, Delaware; A. W. Cloud, Canton, and J. F. Cobb, Toledo. The society's guests who also made addresses and gave profitable demonstrations were Drs. William S. Nicholl, Philadelphia; L. Von H. Gerdine, Kirksville, and F. A. Turfler, Rennsselaer, Ind.

Officers were elected as follows: President, A. Z. Prescott, Lorain; Vice-President, W. R. Sanborn, Akron; Secretary, L. A. Bumstead, Delaware; Treasurer, G. W. Bumpus, East Liverpool. The State Osteopathic Examining Commission consists of M. F. Hulett, Columbus; E. R. Booth, Cincinnati, and J. F. Bumpus, Steubenville.

Oklahoma.—The Oklahoma Association met in Oklahoma City, December 28th, and elected the following officers for the coming year: President, W. A. Cole, Oklahoma City; Vice-President, G. W. Dinning, Pond Creek; Secretary-Treasurer, Ernest Ewing, Blackwell.

Oregon.—The Portland Association met with Gertrude L. Gates on December 21st and elected officers as follows: President, William G. Keller; Vice-President, Edmond B. Haslop; Secretary, H. C. P. Moore; Treasurer, Katherine Myers. Meetings will be held monthly beginning January 18th.

A committee composed of Drs. R. B. Northrup, Katherine Myers and E. B. Haslop was appointed to revise the Constitution to meet the present demands. Arrangements looking to the preparation of monthly programs were effected and the profession in Portland are enthusiastic over the re-organization of the City Society.

H. C. P. Moore, D. O., *Sec'y.*

The mid-year meeting of the Oregon Association was held in Portland, December 11th. An excellent program was arranged and carried out, of which William Keller was chairman.

Otis F. Akin has returned from a month's visit East, where he attended the Clinical Congress of Surgeons of America in New York City, and spent a week in Portland, Maine, with Dr. Abbott, whose methods Dr. Akin is successfully using on the Pacific coast. Returning, Dr. Akin spent several days in the hospitals of Detroit and Chicago, and with the Mayo brothers at Rochester, Minn.

Dr. J. E. Anderson of The Dalles, Oregon, is the first osteopathic physician of that state to be elected to the legislature, he having been recently elected on the Republican ticket, to represent his district, Hood River and Wasco Counties, in which he has practiced straight osteopathy for more than ten years past.

The Marquam Bldg., which has been the home of many osteopathic physicians for a great many years, is now being re-built and replaced by a twelve story concrete structure. This causes the following members of the profession to locate as below: W. O. Flack, Abington Bldg.; Drs. Graffis, Northwest Bldg.; W. A. Rogers, Selling Bldg. This is the first move Dr. Rogers has made since coming to Portland fourteen years ago.

Mabel Akin has recently returned to Portland after two months' sojourn in southern California.

Pennsylvania.—The Philadelphia County Society held its regular meeting on December 17th. A. P. Firth, Newark, N. J., was the chief speaker from the subject, "Diet and the Simplicity of Its Laws." The meeting was well attended and much enjoyed.

Washinton.—The following resolution was adopted at a recent session of the Eastern Washington organization:

Since that grave reaper, Death, has entered the home of one of the brothers of our profession, in our city of Spokane, and in removing from the scene of this earth, Edith Shaffer Garrigues, has left desolate the home of our brother osteopath, Dr. Louis L. Garrigues, we, the fellow osteopaths of Dr. Garrigues, do express to him our sincere and heartfelt sympathy in this his hour of bereavement, and pray that the Lord may vouchsafe to him strength to bear this loss of a loved companion.

T. C. Morris, D. O.,
J. E. Hodgson, D. O.,
Grace M. Nichols, D. O.,
Committee.

At a recent election, Dr. Nina J. Croake, of Seattle, was elected to the Legislature on the third party ticket. She has the distinction of being the first woman to be elected to the legislature of that state.

The Southwest.—The Southwest Osteopathic Association was organized in Wichita, Kansas, November 29th and 30th, by members of the profession from Kansas, Oklahoma and Texas, with the following officers: President, P. W. Gibson, Winfield, Kansas; Vice-President, H. C. Wallace, Blackwell, Oklahoma; Secretary-Treasurer, Florence L. McCoy, Wichita, Kansas.

The program was intended to be really post graduate work and was conducted by L. von H. Gerdine, of Kirksville. Some of the subjects discussed by him and other members the first day were: "Diseases of the Lungs," "Relation of Osteopathy to Public Health," "Diseases of the Heart," "Conditions Which are Called Rheumatism," "Serum and Vaccine Therapy," "What is an Osteopath," "Infectious Diseases," "Diseases of Children." On the second day, assisted by members, he lectured and discussed "Differential Diagnosis," "Technique of Correcting Pelvic, Dorsal and Rib Lesions," "Diseases of the Nervous System," "Medication Through Bacterial Products," ""Diseases of the Kidneys," "Tonsils," "Forced Feeding," "Diseases of the Stomach," and "Several Professional and Ethical Questions."

A resolution was adopted endorsing the efforts of the Teachers' Association of the state to secure legislation, making examination of school children for eye, ear, nose and throat deficiencies compulsory. The organization has the hearty support of the profession in the Southwest.

Saskatchewan.—The osteopathic physicians of the Province of Saskatche wan met at the office of Drs. Raffenberg, of Regina, on December 28th, and organized the Saskatchewan Osteopathic Association, electing the following officers: President, E. L. Raffenberg, Regina; Vice-President, Emma Sniff, Moose Jaw; Secretary and Treasurer, Fay Bergin, Moose Jaw.

Fay Bergen, D. O., *Sec. and Treas.*

Notes and Personals

THE PHYSICIAN'S ECONOMICS

As noted in the last issue of the JOURNAL, the physicians, particularly in the East, are uniting theselves with the American Society of Medical Economics which has been incorporated under the laws of New York. They do not, however, seem to be a unit as to the true object of this organization. Dr. Thomas Dixon, of Brooklyn, who was quoted in the JOURNAL as greatly interested in the question of increasing the physician's compensation, is quoted in the newspapers as being vigorously opposed to the new organization. A quotation from him in the *New York Herald* is, "A Doctor's Trust controls handling of patients sent to the hospitals for surgical operations and the most profitable business of the medical fraternity is of course surgery."

The *New York Times* of December 22nd, very strongly pro-medical speaks of the organization as already having a thousand members and its purpose is to become national in scope. A few of the objects of the organization may be interesting. Among the number is to "Use all proper means to expose, suppress and remedy all forms of quackery, to oppose all acts tending to encroach upon the practice of medicine, such as legislation enacted, establishing pseudo specialists in medicine and the extension of the work of the Board of Health along the line of preventing medicine known as general sanitation, etc. To organize and carry on a campaign against the abuse of medical charity, to lessen all unjust, illegal and dishonorable practice of medicine."

The doctors themselves, then, are suspicious of this for the reason that they believe it to be tightening the hold of medical monopoly in the country, it must be admitted that they are in a position to give expert testimony on this point.

A POSSIBLE CAUSE OF DESERTION

In a recent newspaper interview, General Wood, M. D., head of the United States Army, speaking of attempts to account for desertions from the army, states that the number of desertions for last year was an increase of almost 1,000 over similar desertions for the previous year, and his explanation is that probably many young men enlisted thinking there would be actual field service and, not finding it, they deserted.

It is possible that many young men look upon the army life they find as more a clinic conducted by Dr. Wood and his sub-ordinates, than a real army in the sense in which they expected it to be, and not being especially interested in medical experiments (on themselves), they quit.

OSTEOPATHIC TESTIMONY RULED OUT IN ONTARIO

In a suit for damages against a Railroad Company in Hamilton, Ontario, recently, W. O. Lewis, D. O., had been summond to testify as to the nature of the injuries received by the plaintiff. The judge, however, would not accept the evidence, saying that an osteopath was not qualified to give the evidence regarding a person's injuries before a court of law.

SMALLPOX IN ONTARIO

Hamilton, Ontario, has suffered an outbreak of smallpox and vaccination is being put to a severe test by the Health Officer, much to the disgust of many of the citizens and physicians of the city. Several cases of septicemia have developed, following the vaccination, and many have been reported seriously ill from this condition.

SCHOOL CHANGES

Arthur M. Flack, dean of the Philadelphia College, announces that on November 1st he assumed the duties as registrar of the college, in addition to the office of dean, which he has filled for some time. A change in location has been made, as will be noted by reference to the advertising pages of the JOURNAL, and the college is now said to have a very desirable location. Dr. Flack continues private practice, devoting his morning hours to his college duties.

Dr. J. W. Hofsess announces the completion of the new building and removal of the Central College to quarters built especially for it, which are admirably suited for the purposes. There are about twenty-five treating rooms and the laboratories and other facilities are complete.

ANOTHER FAVORABLE INSURANCE COMPANY

Dr. E. M. Downing sends the JOURNAL a letter from the President of the Century Life and Accident Company of Philadelphia in which he states that his Company not only accepts osteopathic physicians as risks on the same terms as others, but also accepts reports of osteopathic physicians of examinations made by them of policy holders for obtaining benefits under their policies. The Company issues a very favorable policy, according to Dr. Downing.

DR. CAROL'S CONTRIBUTION TO OSTEOPATHY

Morris M. Brill, D. O., New York, calls attention to the fact that Dr. Still's original contention, that the interference with the force or fluids of the body is the cause of the disease of tissue, is again confirmed by Dr. Carol's demonstration, who has a long article in *McClure's* for January.

It will be recalled that Dr. Carol demonstrates that tissue may be kept alive almost indefinitely by keeping it surrounded with a food-supplying medium, necessary to cellular life. The Nobel prize was awarded to Dr. Carol recently in connection with this work, as being the most notable contribution to medicine within the past year.

CASE RECORD FORMS WANTED

C. A. Dodson, Little Rock, Arkansas, in responding to the plea for carefully kept Case Reports, announces that he and probably many others would be glad to keep daily records if convenient and uniform blanks for the purpose were obtainable. Perhaps several physicians have blanks which are satisfactory to them and if these, are submitted to the Journal, it will endeavor to aid in establishing a uniform system.

"A LITTLE JOURNEY TO KIRKSVILLE"

Dr. Chas. Estell announces that recently Elbert Hubbard spent some time in Kirksville, and one of his recent publications is, "A Little Journey to Kirksville." These will sell at the rate of $60 per thousand; for smaller lots, the author should be written to at East Aurora, New York.

THE BELCHER LAND MORTGAGE COMPANY

The Journal wishes to call attention to the advertisement of the above company in this issue of the Journal. Mr. H. H. Cobb, a trustee of the A. T. Still Research Institute and one of its fiscal agents, is president of this company, which deals in and guarantees first mortgages on western farm lands.

The Journal has never sought financial advertisements and it would not accept this but for the guarantee it has of the success and integrity of this investment company, and but for the further fact that osteopathic physicians whose years of professional activity are necessarily limited, ought to be provided with a means of making investments from time to time in small sums which will be absolutely safe and at the same time produce a good income. The Journal, therefore, has no hesitancy in inviting its readers who have funds to invest to correspond with the Belcher Company.

MARRIED

Miss Muffett Woodson, of Leavenworth, Kansas, to Dr. Lee R. Channell, of that city. At home after February 1st, 510 Chestnut St.

DIED

December 19th, of carcinoma, Edith S. Garrigues, wife of Louis L. Garrigues, of Spokane, Washington.

At Santa Ana, California, December 6, 1912, Mrs. Mary E. Littell, aged 80 years. Deceased was the mother of Dr. U. G. Littell.

PENNSYLVANIA BOARD EXAMINATION

The Board of Osteopathic Examiners of Pennsylvania will hold their mid-year examination in Philadelphia, February 24th to 27th inclusive.

Virgil A. Hook, D. O., *Sec'y.*

PERSONALS

S. A. Ellis, after a successful expedition for big game and exploration in Africa, recently returned to his home in Boston, Mass.

Jas. L. Hollaway, President of the A. O. A. for year 1911-1912, has just resumed his practice in Dallas, Texas, after a severe illness from typhoid.

APPLICATIONS FOR MEMBERSHIP

CALIFORNIA

Cramer, Myrtle A. (LA), Story Bldg., Los Angeles.
Ragland, Hugh S. (Sc), Mason Bldg., Los Angeles.
Meleski, Mary M. (A), 1480 Clay St. San Francisco.

FLORIDA

Lightsey, DeWitt (A), Marquis Bldg., Bartow.
Turner, Arthur R. ((S), 424 Central Ave., St. Petersburg.

ILLINOIS

Short, G. W. (Ac) Logan Bl., Chicago.
Backus, Loretta (Ce), Stockton.
MacGalliard, A. E. (A) 19th & D Sts., Granite City.

INDIANA

Stephens, Walter C. (P), Westfield.

IOWA

Gordon, L. E. (A), Eldora.

MASSACHUSETTS

Bolan, Harry R. (Mc), 36 Princeton St., Boston.
Jacobs, Eloise F. (Bn), 177 Huntington Avenue, Boston.
Wallace, Wilfred H. (Mc), 37 W. Elm St., Brockton.
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Davidson, Sara A., 58 Metcalfe St., Montreal.

CHANGES OF ADDRESS

Becker, B. H. Tatum, from Columbus to Meyer's Bldg., Ashland, Ohio.

Bergen, P. J., from Lillis Bldg. to 512 Woodland Ave., Kansas City, Mo.

Bright, S. H., from Paul-Gale-Greenwood Bldg., to Royster Bldg., Norfolk, Va.

Estlack, A. E., from Hart, Mich., to Mariana, Ark.

Dr. Charles Finerle to 1st Nat. Bank Bldg., Corina, Cal.

Flack, W. O., from Marquam Bldg. to Abington Bldg., Portland, Ore.

Harrison, John H., from Central Bk. Bldg. to Goodwyn Institute, Memphis, Tenn.

Henry, Percy R., from 187 Linwood St. to 410 1-2 Clinton St., Brooklyn, N. Y.

Herman, J. C., from Magnetic Springs, O., to 20 Valucia Ave., Daytona, Florida.

Hubbell, Preston R., from Flint, Mich., to 1664 Woodward Ave., Detroit, Mich.

Ilgenfritz, M. E., from Osceola to Britt, Iowa.

Kaiser, Irving R., from Atlanta to Macon, Ga., (P. O. Box 361).

Kenderdine, Clarence, from Mint Arcade Bldg. to Bonnet Bldg., 1537 Chestnut St., Philadelphia, Pa.

O'Neill, Addison, from Ridgewood, N. J., to 9 N. Beach St., Daytona, Fla.

Rogers, W. A., from Marquam Bldg. to Selling Bldg., Portland, Ore.

Washburn, B. E., from 102 Shinn St. to Johnson Co. Sav. Bk. Bldg., Iowa City, Ia.

Young, D. D., from Los Angeles, to McMinnville, Ore.

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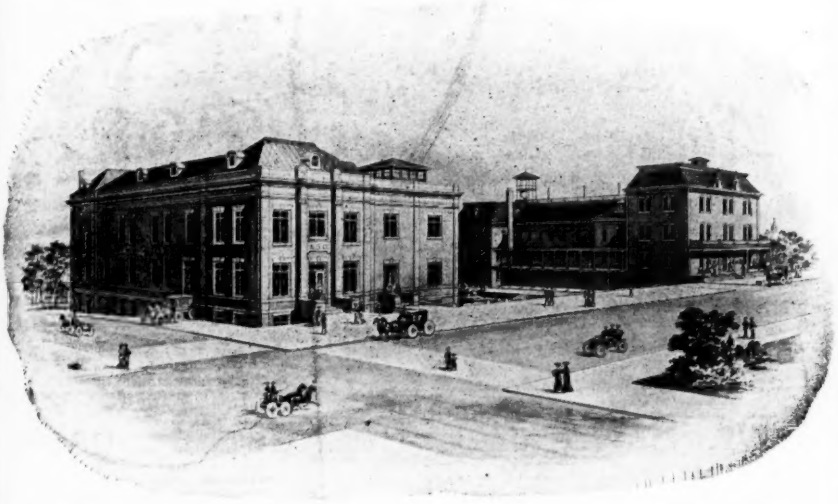

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